The Adaptive City

Cities in transformation
Research & Design

Ideas, Methods, Techniques,
Tools, Case Studies

EAAE / ARCC
International Conference
on Architectural Research

Milano 7-10 June 2012

Temi

POLITECNICO
DI MILANO

UNIVERSITÀ DEGLI STUDI
DI GENOVA

ARCC
ARCHITECTURAL RESEARCH
CENTERS CONSORTIUM

EUROPEAN ASSOCIATION
FOR ARCHITECTURAL EDUCATION

EAAE, Leuven, 2012

COMMISSIONE
EUROPEA

COMUNE DI MILANO

CONSIGLIO NAZIONALE
DEGLI ARCHITETTI
PIANIFICATORI
PAESAGGISTI
E CONSERVATORI

CONSULTA
REGIONALE LOMBARDA
DEGLI ORDINI
DEGLI ARCHITETTI
PIANIFICATORI PAESAGGISTI
E CONSERVATORI

ORDINE DEGLI ARCHITETTI
PIANIFICATORI PAESAGGISTI
E CONSERVATORI
DELLA PROVINCIA DI MILANO

ORDINE DEGLI ARCHITETTI
PIANIFICATORI PAESAGGISTI
E CONSERVATORI
DELLA PROVINCIA DI COMO

ISBN 978-2-930301-56-3

Summary


nno per demonstrationer & locorum uocabula.
PALUDES
VIA APPIA
COLONIA
ADVENAS

Summary / Theme 1

Eman M. Abdel Sabour
German University in Cairo
Stephen Luoni
University of Arkansas Community Design Center.

Khedivial Cairo: An Evolved Metabolism

KEYWORDS
Urban spaces, Khedivial Cairo, Sustainable urban development, district transformation.

INTRODUCTION

Now located within a city of 17 million people, the urban structure of 19th century Khedivial Cairo was planned when the city's population consisted of only 350,000 people. The metabolism of Cairo has since evolved, along with its structures of social and economic exchange, transportation, urban ecology, and its imagability - or comprehensibility. The 19th century structure of urban spaces requires adaptive reuse to address overdevelopment brought on by contemporary densities and movement systems in this emergent global megacity.

The aim of this study is to discuss our adaptive reuse design proposal for Opera and Ataba Squares, the heart of Khedivial Cairo (figure1). The paper will examine the transformations in the urban structure of Opera-Ataba Squares and the adjoining district between 1870 and 2010, as they relate to the sustainable urban development plan for 2030. Our proposal suggests an ecological urbanism that reconciles the grand civic expressions of the 19th century urban system with the new energies of the functionalist city. This Gordian knot of elevated highways, congested surface roads, extensive automobile parking and sprawling informal markets will be integrated into a new open space system that optimizes the city's intensified energies.

The DNA of 19thcentury urbanism is recombined with a 21st century verticalized urban order that manages an unprecedented magnitude of resource flows in four novel spaces: 1) an extended Opera Mall, 2) an Ataba Square Covered Market Plaza and Flyover Gateway, 3) the Hamdi Seif Al Nasr Multiway Boulevard, and 4) the new Great Lawn of Azbakiyya Garden. These four spaces deliver new ecological services combined with the expansion of urban services towards a new sustainable Cairo.

Opera–Ataba District Background

In preparation for celebrations surrounding the grand opening of the Suez Canal (Abu Lughod, 1971), Khedivial Cairo's urban structure was planned using current European fashions of the time. Inspired by Haussmann's work in Paris, the urban plan included an Opera House lining the main square, (Mitchell, 1991). Ever since, the Square has been known as Opera Square. The construction of the Opera House was accompanied by numerous other edifices that incorporated 19th century revivalist and eclectic features characteristic of the period. Most of these structures are now listed as heritage buildings due to their significant architectural and aesthetic value (Scharabi, 1989). The adjoining Ataba square predates Opera Square, and its edges were also reconfigured to accommodate the new French order. Ataba Square still has many treasured heritage buildings along its boundaries including a fruit and vegetable market, hotels, department stores, a fire station, and, the prominent Ataba main post office. As expected in this particular urban order, Opera and Ataba Squares marked the crossroads of main thoroughfares and collectively came to be seen as the heart of Cairo. A large expanse of land between Opera and Ataba squares was designated for Azbakiyya Garden (Raymond, 2001); one of Cairo's rare public recreational and cultural parks. Egypt's largest a second-hand and antiquarian book market sprang up and flourished alongside the garden perimeter fence, as the city pushes into the edges of this green refuge.

What was once the pride and joy of Khedive Ismail's vision of a glorious "Paris of the East" (Myntti, 1999) has suffered great deterioration due to general neglect and failure to restore the opera house after a devastating fire in 1971. The combination of Opera and Ataba squares originally formed a major cultural and recreational node, which has evolved into one of Cairo's main transportation hubs. In addition to the street network (figure 2) that now sees sponsors heavy motor traffic, other means of transport figure prominently. A major subway node with three metro lines (first line: Helwan-Marg, second line: Giza-Shobra, and third line: Imbaba-Cairo Airport) underneath Opera-Ataba Squares connect the heart of Khedivial Cairo with the rest of greater Cairo. An adjacent bus terminal houses thirty bus routes that radiate out to serve greater Cairo. The two squares are currently separated by the Opera Square multi-story car park built on the site of the burned out Khedivial Opera House.

District Urban Transformation

1870 - Birth of Khedivial Cairo

As historian M. Scharabi states: "Cairo's multifaceted, multiform appearance today is the result of an extraordinary collision between the Orient and the Occident" (Scharabi, 1989). Khedivial Cairo's metabolism materialized from a European urban structure based on a, gridiron plan overlain with oblique boulevards, anchoring squares, and traffic roundabouts. In contrast to the medieval fabric of Islamic Cairo to the west, the District street plan for this undeveloped land near the Nile was clearly defined through geometric principles, and a tidy bourgeois order of mixed-uses alien to the more porous Arab sector Landmarks, such as the Opera House and Azbakiyya Garden (figure 3) , ,establish a western type of urban representational order. This newly born structure offered a European lifestyle featuring enjoyable outdoor public spaces uncommon to Cairo.

1952 - Deterioration of Khedivial Cairo

After the 1952 revolution the district started to lose its fine polished urban qualities as a result of policies that forced land reforms and intensive and unsympathetic construction. Historic buildings were subject to rent freezes, leaving little capital for maintenance and repair. This led to the rapid deterioration of several buildings (Amedi J., Nagler H., Wessling C., 2009). The ensuing exodus of a large part of the foreign community after the revolution contributed to further degradation in quality of the urban space due to changing uses exercised by a burgeoning local community. An informal economy overtook these civic spaces developed for a cultural and foreign elite. Even the use of the Opera House changed from international orchestral performances and ballet to local Arabic music concerts. The degradation of the street system started in 1960, when the 26th of July Street cut through the heart of Azbakiyya Garden leading to serious deterioration. This was greatly exacerbated in 1971 when a great fire engulfed and destroyed the Opera House, and destroyed many of the other architectural treasures distinguishing the district. The cultural heart of Khedivial Cairo was then transformed into a down-at-heel residential district with chronic traffic congestion that has overwhelmed the district.

2010 - Endangered Khedivial Cairo

The 19th century Cairo metabolism for which the Khedivial infrastructure was designed grew more imbalanced over the last 40 years as densities and demographics changed. Residential use declined throughout the district, as it became increasingly given over to heavily commercial and administrative functions. The need for a traffic strategy is all too apparent. Attempts to resolve the traffic crisis started with the construction of Al-Azhar "flyover" Bridge, followed by the creation of Al-Azhar Tunnel, only to exacerbate the traffic problem. Traffic overloads have spilled into public spaces, as the separations between traffic and pedestrian realms have turned anarchic. Circulation dysfunctions are not limited to the endless traffic jams and heavy pollution, but fenced-off pedestrian walkways have also undermined connectivity within the district. Arterial throughways like the Al-Azhar Bridge have supplanted the role of public space in organizing the city, creating a clear need to restructure the district's identity through implementation of a coherent plan that restores definable roles for public spaces. The Opera-Ataba district serves as a pivotal location for all socio-economic classes among the population, both in daily life and in needs and special events. However, its appreciable role is threatened by the increasing social polarization between informal sectors and wealthy communities. The area is currently in a very sorry state. If degeneration continues at this rate more urban value will be lost as the rate of deterioration could soon wipe out district's charm and cultural and heritage.

2030 - Sustainable Khedivial Cairo

Sustainable urban development by definition integrates with environmental, economic and social issues - a triple bottom line - underpinning the sustainable development of cities as Curwell, et al. concluded (Curwell S., Deakin M. and Symes M., 2005). Although Khedivial Cairo suffers dramatically in both environmental and social aspects, the economic capital of the district can be a starting point for the redevelopment process. This proposal adapts a redevelopment strategy based on improvements to Azbakiyya Garden that enhances the delivery of urban and ecological services while providing new sources of revenue through new performance venues. Redevelopment of highways into multiway Green Boulevards and the provision of new market spaces underneath flyover bridges complement the re-establishment of Azbakiyya Gardens. The proposal aims to recapture a more pedestrian-friendly, connected public realm responsive to the explosive population growth and its informal market economies.

The proposal (figure 4), seeks transit-supportive land-use development patterns and that promote 'walkability' and access without need for an automobile. Public transit and walkable neighborhoods work hand-in-hand since everyone is a pedestrian at the beginning and ending of a transit trip. Sustainable Khedivial Cairo is pedestrian friendly; pedestrians can circulate at the core of the area to markets and Azbakiyya Garden without the need to cross congested and dangerous streets. This self-sufficiency is rewarded with increased safety, improved access, higher energy efficiencies (decreasing the amount of fossil fuels used), increased public health (by facilitating physical activity), and better environmental stewardship from reductions in automobile CO2 emissions.

The area proposed sustainable development plan interventions are divided into four Major Spaces: Opera Greensward (figure 6), Gateway (figure 7), Hamdi Seif Al Nasr Multiway Boulevard (figure 8), and Great Lawn of Azbakiyya Garden (figure 9).

Four Innovative Spaces

Opera Greensward

Opera Square is extended into a new public greensward with new outdoor performance space, a gateway landmark, and an intermodal transit hub with underground parking (figure 10). The proposed gateway structure, harboring a dot screen pattern of the former Opera Hall House, reclaims the lost civic quality of the square's eastern edge. Housing a visitor overlook at the top, the gateway provides a new backdrop and staging for performance venues on the expansive greensward atop the metro and automobile parking underneath. Opera Greensward reestablishes a civic anchor recalibrated to the new social energies of a larger Cairo. Meanwhile in Ataba Square, a new large Covered Market Plaza and Flyover will facilitate rich commercial and cultural experiences.

Gateway

Recognizing the necessity for flyover expressways to relieve surface traffic, a new "mat building" (figure 11) reorganizes the surface of Ataba Square as a covered pedestrian zone to accommodate spillover market activity. The Flyover Gateway atop the mat structure (figure 12) civilizes rogue highway engineering structures through a mat urban prototype that can be sequentially implemented throughout Cairo. This vertical urbanism shapes and shelters a climate-friendly pedestrian landscape underneath while proposing an automobile-scaled landscape above with green roofs and ventilation towers that function as urban lanterns. The mat prototype is an exemplary urban solution since it multiplies the urban surface (and shade), laminating functions of conflicting scales and speeds in the same space. The pedestrianization and enhanced liveability (figure 13) of Ataba Square is accompanied by land-use changes that favor a more contextual mix of residential, office, and live-work functions.

Hamdi Seif Al Nasr Multiway Boulevard

A new multiway boulevard integrates dedicated flow paths for various transportation modes involving bus, rail, auto, and pedestrian lanes. A cross grain of pedestrian bridges and tunnels establish new connections between Opera Greensward and Azbakiyya Garden. The vegetated multiway boulevard mitigates heat island effects while facilitating improved intermodal transportation services due to the relocation of the bus station and new tram service on the boulevard. This well-regarded street type introduces a resourceful and efficient traffic planning tool complementary to the urban planning vocabulary that defines Khedivial Cairo.

Great Lawn of Azbakiyya Garden

A new Great Lawn, terminating at the axis of 26th of July Street, provides an urban refuge while organizing peripheral cultural programs on a more intimate scale. The northwest quadrant of the four-square lawn is punctuated by a large artificial hill that overlooks Opera and Ataba Squares, while making this green landscape visible to those outside of the gardens. The garden periphery is composed of fusion landscapes that celebrate both Arab and Western place-making traditions. Indeed, proposed water features, typical in the most celebrated Arab gardens, will function in tandem with a convective cooling infrastructure located beneath Azbakiyya Garden. The periphery gardens reestablish a well-defined and orderly transition between bustling streets and quiet gardens inside. The Azbakiyya book market is also relocated adding both physical and cultural values to the garden's new configuration. The garden periphery absorbs the casual siting of the metro facilities and relocation of the book market to a shaded plaza at the western edge. Opposite this, a catenary theater structure terminating the axis of 26th of July Street extends the National Theater complex to create both garden and street frontages.

The greensward, lawn, multiway boulevard, covered market, and flyover gateway reconstitute a symbolic urban structure for this section of Cairo that is more aligned to the metabolism of a new 21st century Cairo. The resiliency and metropolitanism within the imported 19th century order readily support fusion of Arab and Western traditions. Reconfiguring the urban surface into new sectional or vertical formats, these urban landscapes evolve hybrid conditions that deliver new urban and ecological services. New ecological services include urban climate conditioning, carbon sequestration, humidification, amplification of habitat and biodiversity, mitigation of heat island effects, improved aesthetics and recreation. Enhanced urban services include increased connectivity and wayfinding, coordination of intermodal transportation, greatly enhanced pedestrian and market realms, and innovative street types that address traffic problems unique to the bourgeoning megacity. When managed well, this unprecedented intensity can be the material from which a magical urbanism can accommodate ever more social conquest of the city.

Eman M. Abdel Sabour
German University in Cairo
Stephen Luoni
University of Arkansas Community Design Center.

Bibliography

Abu Lughod, J. (1971). Cairo: ***1001 Years of the City Victorious***. Princeton, New Jersey, USA: Princeton University Press.

Amedi J., Nagler H., Wessling C. . (2009). ***The importance of urban renewal in the historic district for the development of Great Cairo.*** Jahrbuch Stadterneuerung: Altrock, Uwe et.al.

Curwell S., Deakin M. and Symes M. . (2005). ***Sustainable Urban Development Volume 1 The Framework and Protocols for Environmental Assessment***. London and New York: Routledge.

Mitchell, T. (1991). ***Colonizing Egypt***. Berkeley, Los Angeles, London: University of California Press.

Myntti, C. (1999). ***Paris along the Nile: Architecture in Cairo from the Belle Époque***. Cairo: The American University in Cairo Press.

Raymond, A. (2001). *Cairo: City of History.* (t. b. Wood, Trans.) Cairo, Egypt: the American University in Cairo Press.

Scharabi, M. (1989). *Kairo: Stadt und Architektur im Zeitalter des europäischen Kolonialismus*. Tübingen: Verlag Ernst Wasmuth.

Legend

[a]Figure 1: Opera – Ataba district is the heart of Khedivial Cairo, (Source: Author own work with University of Arkansas Community Design Center)

[b]Figure 2: Street pattern diagram comparing between current traffic solutions and proposed traffic solutions, (Source: Author own work with University of Arkansas Community Design Center)

[c]Figure 3: Azbakiyya Garden as a major indicator for the district transformation process between 1870 and 2030. (Source: Author own work with University of Arkansas Community Design Center)

[d]Figure 4: Opera – Ataba district Sustainable development proposal, main layout showing proposal major four innovative spaces. (Source: Author own work with University of Arkansas Community Design Center)

[e]Figure 7: Opera Green sward and Hamdi Seif Al Nasr Multiway Boulevard, open space is extended into a public greensward with new outdoor performance space, a gateway landmark, and an intermodel hub with underground parking. (Source: Author own work with University of Arkansas Community Design Center)

[f]Figure 8: Ataba square covered market xeriscape roof garden and flyover gateway (Source: Author own work with University of Arkansas Community Design Center)

[g]Figure 9:view of Hamdi Seif Al Nasr Multiway Boulevard and the New Visitor overlook, and Gateway building (Source: Author own work with University of Arkansas Community Design Center)

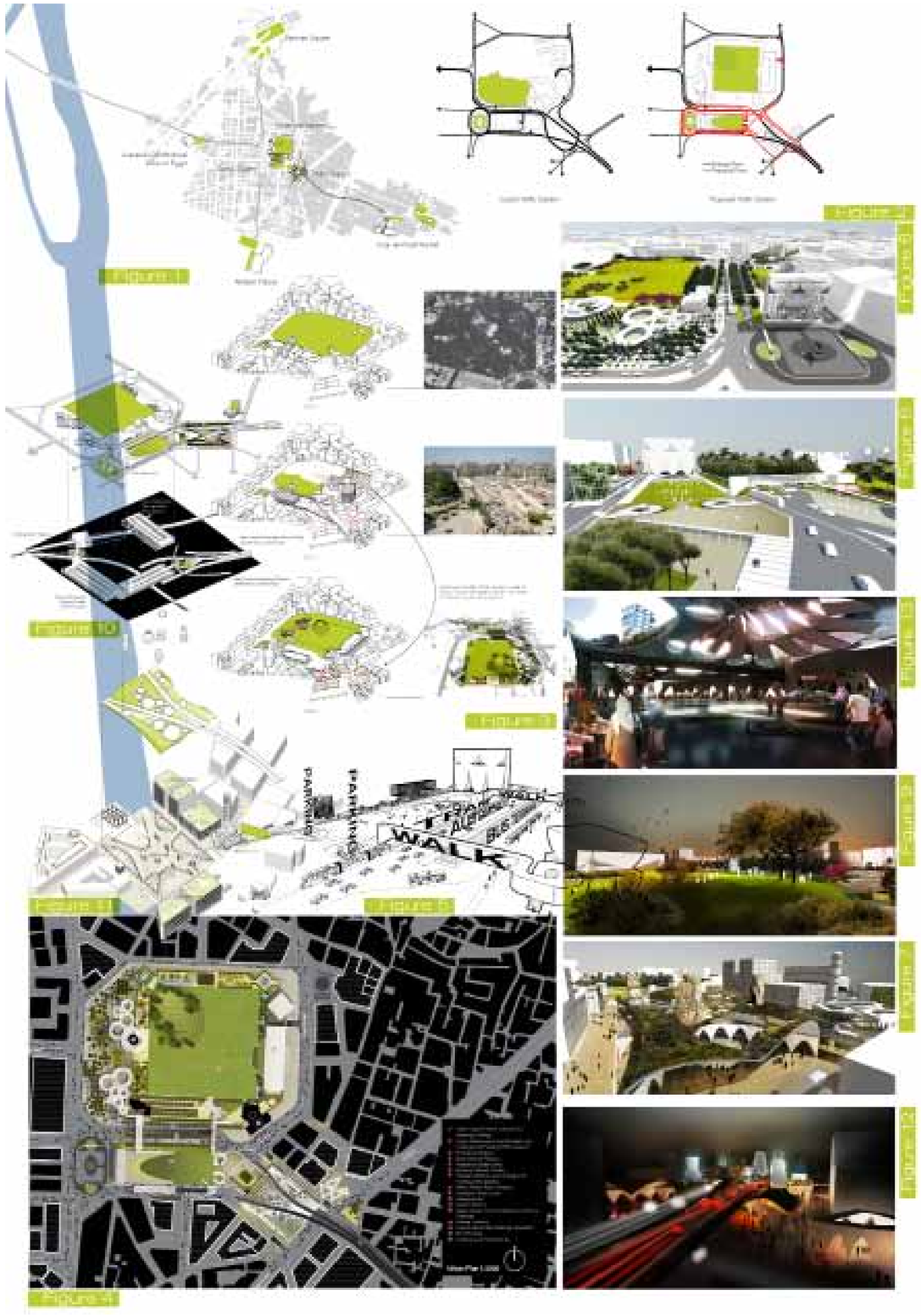
[h]Figure 5: illustration for Azbakiyya Garden proposed development (Source: Author own work with University of Arkansas Community Design Center)

[i]Figure 10: intermodel transit hub with underground parking (Source: Author own work with University of Arkansas Community Design Center)

[j]Figure 11: Diagram showing the “mat building” (Source: Author own work with University of Arkansas Community Design Center)

[k]Figure 12: Ataba square covered market and flyover gate , recognizing the necessity of flyover expressways to relieve surface traffic, a new ‘mat building’ reorganizes the surface Ataba square as covered pedestrian zone to accommodate spillover market activity (Source: Author own work with University of Arkansas Community Design Center)

[l]Figure 13: view under Ataba square covered market hall (Source: Author own work with University of Arkansas Community Design Center)



Priscilla Ananian
Université catholique de Louvain, Belgium

Residential metropolization process and new forms of urban centralities

Introduction

The metropolization process has been leading cities and stakeholders to intensify social, economic and cultural relations with distant territories instead of with their own hinterlands. This is the situation of world systems described by several authors since the early 1980s (Hall, 1984), (Sassen, 1991), Taylor and Derruder (2007). Even if the phenomenology and rhetoric related to the globalization process is based on the de-territorialized and disconnected spaces represented by Peter Taylor (2007) as a *hinterworld*, they have also been reinforcing the specificities of the local level and increasing conflicts with metropolitan dynamics driven by the globalized economy (Koolhas, 2000), (Mangin, 2004), (Lévy, 2008).
Twenty years after the emergence of best practices in urban regeneration as opposed to gradual emptying of city-centers and delocalization of city functions, cities have to deal with new and complex issues generated by a cross-process between metropolization and residentialization (Bromley et al, 2005). On the one hand, cities have to deal with the emergence of new urban centralities related to production, transmission and transfer of knowledge in a multiscale-based geography (Lévy, 2008). On the other hand, cities have to deal with an increased transformation of urban structures by housing production and accompanying facilities.

The *knowledge-based economy* is a relatively new concept defined by the OECD in 1996 as a growing participation of economic activities related to knowledge in the globalized economy. Despite the economic, social and cultural significance that it implies in contemporary society, knowledge-based economy might not be considered as a break from former economy, but as an evolution of economic development based on innovation. (Amable et al.,1997)
Richard Florida (2003) discusses the empowerment of the creative class to reconvert economy into a knowledge-based economy. According to Florida, development, growing and competitiveness of cities and regions depend on their ability to attract and maintain creative workers. Florida highlights that a creative class related to advanced technology and arts is a powerful engine when it comes to transforming cities and reconverting the economy. Although the question cannot be summarized as the way public policies cope to attract and maintain creative workers, it requires understanding how knowledge-based economy can cope with reducing the gap between both 'creative' and 'no-creative' classes.
Similarly to other compact European cities, the Brussels Capital Region has to manage conflicts generated by this phenomenon by choosing the best political option to restructure its own territory on several scales. Demographic projections foresee that the inner city population of Brussels will have been driven to rise by 20% by 2020, while public policies and the market's logic are leading Brussels' economy towards more creativity to balance an economy characterized by administration and representation functions. University colleges and universities might provide a very interesting example to start a process of metropolitan governance. They cope with housing production, the sharing of public transport infrastructures and facilities and the coordination of economic development whilst avoiding the negative competition that is harmful to the development of the metropolis as a whole.

The situation of Brussels is specific mainly because of the limited size of its territory (19 municipalities totalizing 162km2 shared by 1.138.575 inhabitants and generating a density of 7.000 hab/km2 - data on 1st January 2012). This requires a rational land management, including creative ways to integrate economic activities into the urban fabric. It is also specific because, among these economic activities, Brussels hosts two complete universities and several faculties belonging to other university cities in the metropolitan region. There is no institutional definition of the Brussels metropolitan region, even if the territory covered by the next Regional Express Railway infrastructure (135 municipalities totalizing 3.051.869 inhabitants generating a density of 650 hab/km2) seems to present a definition shared amongst stakeholders of the three country regions.

It means that Brussels Capital Region welcomes in its territory 75.000 students and the metropolitan region welcomes 126.604 more students, 74.397 from the French Community and 52.207 from the Flemish Community. Therefore, in theory, Brussels presents an important potential to create a stock of creative working force ready to strengthen the economy and balance the administration with innovative functions. However, the main challenges in coordinating the knowledge-based economy in Brussels metropolis are the:

• Complexity of Belgium's institutional framework which is split into three regions with different systems of urban planning.

• Competition of the three regions to attract and develop the knowledge-based-economy through public policies of incentive planning.

• Competition between the two main communities - French and Flemish - who organize the system of higher education.

• Conditions of housing in terms of affordability and accessibility to work and major residential facilities.

Residential metropolization led by the knowledge-based economy

The main contemporary strategy for urban transformation led by public/private partnership since the 1990s is to improve conditions to attract the knowledge-based economy activities with the aim to accelerate reconversion from an industrial economy to an informational economy. Unfortunately, this process does not consider the way other creative activities may be included in this societal transformation. These other activities are essential to intensify the urban vitality and to ensure that a larger part of the population can be included in this process of societal transformation. Metropolitan functions, especially those linked to education and culture, are attractive to the creative workforce. If on the one hand this ability to attract a creative workforce improves the livability of the city, it can, on other hand, be a threat as it can lead to the dynamics of gentrification. The issue is that main urban policies at European, regional and local levels, concentrate on developing the knowledge-based economy without thinking of that is at stake when urban transformation is led by this economy. Creativity and innovation are two concepts that are present in the majority of political discourses and policies related to urban regeneration and regional development. However, even though urban regeneration led by the knowledge-based economy and residential development can enhance and upgrade urban environment, it can also create new ways of coordinating territories without these governance provisos automatically being an advantage to the community as a whole. The three main conditions to reach sustainable urban development goals are political will, social acceptability and participatory processes able to fix rules and regulations which allow most people to benefit from urban services networks.
This statement reinforces the objective of all research involved in making a critical appraisal of the ways and means by which centers are transformed by habitat and to identify the planning and governance stakes for a sustainable metropolitan development. We make the assumption that the metropolization process is not only induced by the globalization of urban spaces or of the architecture of signs and enterprises. It also takes place locally through the usual development of towns and residential densities and through the emergence of new ways of living which allow the systems of centrality to evolve at various scales. Educational facilities at all levels from primary schools to universities contribute in the development of the basis for a sustainable economy and in enhancing social inclusion.
Measures of this process are made by European policies that identify the percentage of creative professionals among active population. Results show that on a regional and urban scale, the creative workers represent between 10 and 18% of the active population, depending on the city. This means that this field makes a large contribution to PIB but still only includes a minority part of population.
Cities and regions have been working on developing the spatial and economic conditions needed to attract new investments and enterprises related to some specific fields: R&D, higher education facilities, telecommunication, advertising, and consultancy.

However, this economic field is bringing cities and regions into the post-industrial era in several ways: first it modifies metropolitan structures by introducing clusters of economic activities related to physical infrastructures such as stations, airports, railway and roadways networks. Secondly it transforms the system of urban centralities and the hierarchy between cities which implies increasing the demand for creative workers involved in public transport and housing. Thirdly, knowledge-based economy stakeholders and public authorities invest in new locations in the inner city which is a first choice location well connected to other urban facilities. This process implies the transformation of former urban fabrics by new economic activities and residential patterns.

University poles and city networks: metropolitan planning frame for Brussels

Belgium is a federal state consisting of three regions: Flemish region, Wallonia region and Brussels Capital Region and three communities: Flemish, French and German. University locations overlap the network of fourteen Belgian cities. Brussels Capital Region is connected with one or more cities following two major criteria specific to the Belgian institutional framework: firstly the local language - French or Flemish - and secondly religious affiliations - catholic or secular. Since the Bologna Decree of 2004 which aimed at dealing with the issue of competition between universities at the European level, higher education institutions decided to create associations. In the French Community, they are grouped in three Academic unions (horizontal relationship) and three poles (vertical hierarchy)[1]. The Flemish Community is organized differently: colleges have been associated with universities since 2003 according to a decree on the restructuring of higher education adopted by the Flemish Government[2].
Cities play a major role in increasing the economic appreciation of a knowledge-based economy because this appreciation cannot be dissociated from the socio-cultural capital of urban resources - people and places - or from the quality of institutions, creative workers and urban environment.
Metropolization is also changing the hierarchical organization between cities and the knowledge-based economy is contributing to these changes. In a context of strong competition between territories reinforced by global economy, European cities are trying to position themselves among the leader cities investing on knowledge, creativity and innovation. *'Digital cities', 'educational city', 'creative city', 'territories of innovation'* are some of the current denominations used by governments to implement public urban policies based on knowledge and innovation. Links between territory development, urban regeneration and the knowledge-based economy could benefit sustainable development if they included all levels of social and economic networks and if they connected the physical structures of this economy to sustainable urban forms.
Brussels metropolitan region is connected to several city networks in the North and the South of the country. Except from ULB and VUB whose campus headquarters are located in Brussels, the majority of university cities have secondary locations or University colleges located on the Brussels Capital Region territory. But Brussels suffers from a lack of spatial planning able to connect cities to the metropolitan area and thus create a metropolitan identity which would hone their competitive edge. Knowledge-based economy and its facilities could be the basis of an interesting planning of the Brussels metropolitan region as it concentrates several academic unions and universities.
Public policies and urban design can deal with sustainable cohabitation of residential patterns, education poles and multiscale central places in the light of three methodological urban design figures which help develop a knowledge-based economy in Brussels metropolitan region and improve the standard of living.

The metropolis and its hinterworld: Universities facing international competition

The first representation is of Brussels as an international metropolis. This led to position and localizes universities, university colleges, branches and other functions associated with a high level of population catchment, with intensive and extensive development of new centralities, with functionality and adaptability of space and with city marketing. International metropolises depend on their *hinterworld*, considered not as a space but as hubs of intense exchanges between universities and performance poles located in cities across the world. This figure is represented by the universities whose network is linked to Brussels. Brussels is a major hub whose network of cities extends to the North of the country with Gent, Antwerpen, Leuven and to the south with Louvain-la-Neuve-Mons-Charleroi-Namur.

The polycentric urban region and its hinterland: Universities strengthening cooperation in Brussels metropolitan region

The second representation is of the polycentric urban regional sphere of influence of university cities over their region. The polycentric urban region depends on its hinterland where planning needs to intensify and density around public transport nodes, especially railway stations, to welcome large knowledge-based economy facilities that do not find sufficient space in the city-center. This figure has to structure space around emptiness; in other words, organize densities according to blue, green and grey networks. This figure is represented by the 'triangle of knowledge' of Brussels Capital Region, Leuven and Ottignies-Wavre-Louvain-la-Neuve.

The compact city/ Universities contributing to structure densities and centralities in the inner-city

The third and last representation is the compact city. A compact city is characterized by its walking potential, its continuity, its mixed land uses, but also by a multilevel neighboring of urban spaces generated by universities and other knowledge-based economic facilities. This phenomenon is about urban spaces that are not concerned by only one type of relation. These spaces present local and supra-local relations with intensities relatively close to each other. This figure is represented by the network of neighborhoods in the Brussels Capital Region which hosts ten university campuses (including university hospitals).

Residential patterns related to the knowledge-based economy in Brussels metropolitan region

The knowledge-based economy is not only about finding the best location to implement educational and economic poles related to creativity, innovation and technology. It implies the creation of living conditions to host the creative workforce. The goal is to show the ongoing methodology we are developing for the large scale higher education system in Brussels metropolitan region. The sample we present in this paper is not representative in quantitative terms. We analyzed where and how the staff working for the former *'Institut Superieur d'Architecture Saint Luc-Bruxelles'* lives, now that it has merged, since 2010, with a new faculty at the Catholic University of Louvain. This sample represents 76 employees working part time or full time at the school located in a XIXe century neighborhood of Brussels (Saint-Gilles). The new faculty LOCI has three campuses located in Brussels Capital Region, Louvain-la-Neuve and Tournai. We analyzed five criteria: the first one was the distance from the Brussels' campus: local (200m), neighborhood (600m), district (2km), town (5km) and city region (up to 20 km). The next criteria were the connectivity to public transport, the green spaces, the residential facilities and services, the socio-economic level of the neighborhood and the type of dwellings. More than 70% of employees live in Brussels Capital Region: 22% in high level income neighborhoods and 32% in low income neighborhoods. 32 employees live in a distance under to 5 km from the school (town catchment population scale) whether 18 live in a distance up to 20km (metropolitan catchment population scale). The majority of employees in Brussels live in terraced houses or in flats and 52% are very well appointed with public transport and residential facilities (Zones A and B of connectivity to public transportation). For the 30% left, 70% live in the Brussels metropolitan area (135 municipalities) whose the great majority live in semidetached or detached houses in counter-urban settlements. The diagram below try to summarize how complex it is to link knowledge-based economy development, housing and connectivity to public transport with the diversity of living forms at the metropolitan scale, inner-city scale and neighborhood scale specially those hosting educational campuses in their territory.

Priscilla Ananian
Université catholique de Louvain, Belgium

Conclusion

To summarize we would like to highlight the interaction between three processes - creation of clusters of the knowledge-based economy, transformation of urban centralities and cities networks, and improvement of housing conditions and residential facilities - and how they might change the physical and socio-economic structures at both the inner city and metropolitan levels. We call the resulting process from these interactions - residential metropolization - which we define, based on the example of Brussels, as the transformation of residential functions in metropolitan centers and the emergence of new ways of living generated by knowledge-based economy. Residential metropolization involves the mechanisms of urban habitat transformation and the regulation of housing conditions induced by the evolution of metropolitan polarities and the implementation of the evolution of economy towards the informational era.
Cities have an incredible potential to host and develop the knowledge-based economy because they are flourishing with innovation and culture connected with a potential hinterland and hinterworld driven by a heritage of exchanges between cities and by new patterns of networks emerged from the globalized economy. The sample we used with the staff of Brussels-St. Luc showed us that 70% of the catchment population of creative workers is located in the Brussels Capital Region. In other words, cities have to host knowledge-based economy facilities - universities and all enterprises related to innovation and technology - and create housing conditions for the creative working force responsible for moving this field of economy towards social and cultural development. In the same time this process may not lead to gentrification of low income neighborhoods. It implies improving living conditions for all and opening educational facilities to communities in spatial and cultural terms. Residentialization and metropolization have been discussed in separate ways for too long, even if both processes are complex and fully related. Our hypothesis is that the transformation of the structure of cities through housing space and the knowledge-based economy is at the heart of the metropolization process itself.

Bibliography

Amable B., Barré R., Boyer R., *Les systèmes d'innovation à l'ère de la globalisation*, Economica, Paris, 1997.

Bourdin A., *La classe créative existe-t-elle?* In Revue Urbanisme, n. 344, 2005.

Bromley R., Tallon A., Thomas C., *City Centre: regeneration through residential development: contributing to sustainablility*, in Urban Studies, vol. 42, n. 13, 2407-2429, 2005

Florida R., *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. Basic Books, New York, 2002.

Hall P., *The World Cities, Weidenfeld and Nicolson*, London, 1984.

Koolhas R., Boeri S. et al, *Mutations*, Actar, Bordeaux, 2001.

Lévy J. (eds.), *L'invention du monde: une géographie de la mondialisation,* Presses des Sciences Po, Paris, 2008.

Lévy J., *Echelles de l'habiter, PUCA - Plan Urbanisme Construction Archi¬tecture*, Paris, 2008.

Mangin D., *La ville franchisée : formes et structures de la ville contemporaine*, Editions de la Villette, Paris, 2004.

Roberts P., Sykes H. (eds.) *Urban Regeneration: A Handbook*. Sage Publications Ltd, London, 2000.

Rogers R., *Towards an Urban Renaissance: Final report of the Urban Task Force*, Spon Press, London, 1999.

Sassen S., *The Global city: New York, London, Tokyo*, Princeton University Press, Princeton, 1992.

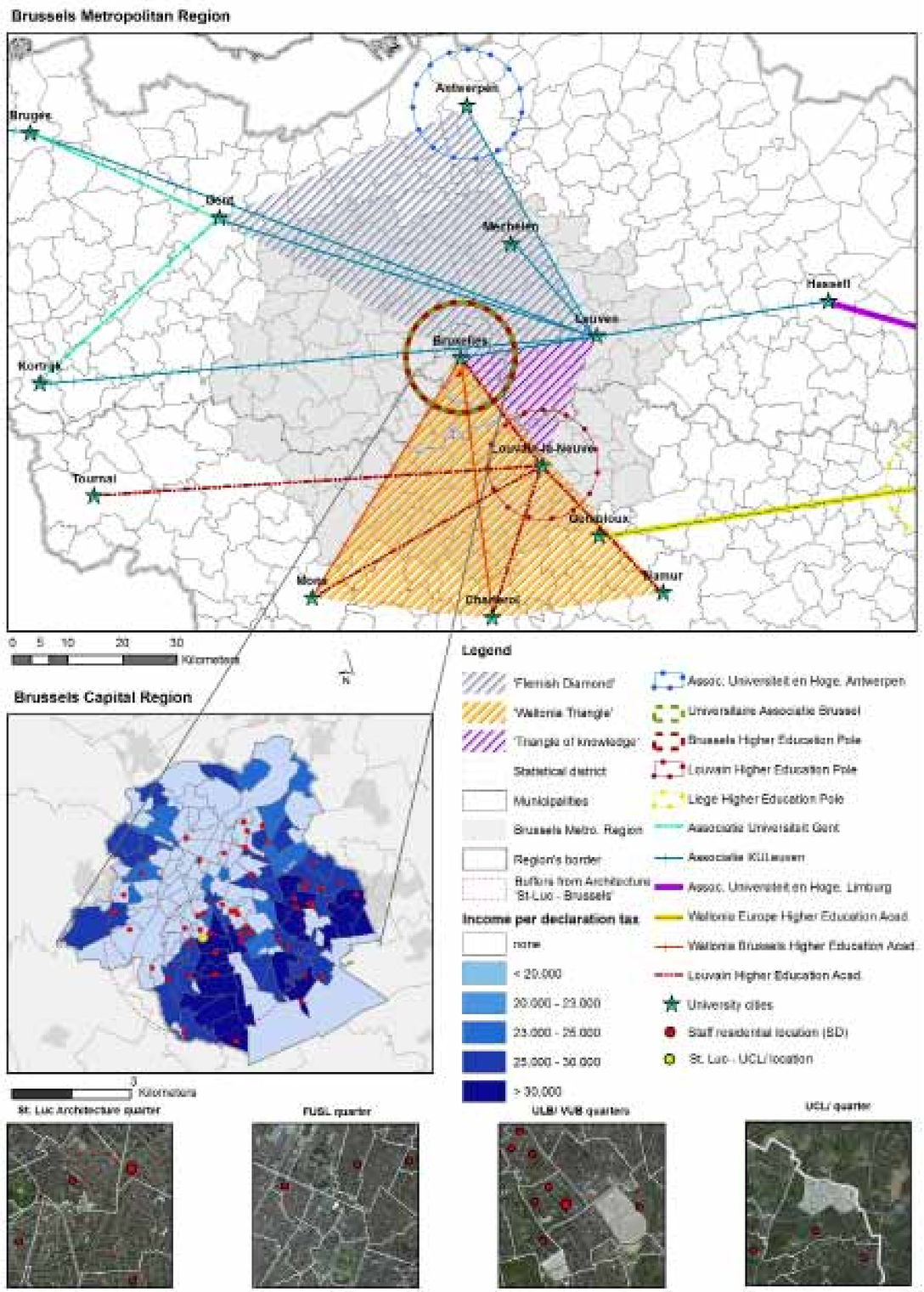
SDEC, *Vers un développement spatial équilibré et durable du territoire de l'Union européenne.* Office des Publications Officielles de la Communauté Européenne, Bruxelles, 1999.

Taylor P., Derruder B. et al (eds.), *Cities in Globalization: Practices, policies and theories*, Routledge, Oxon, 2007.

Notes

[1] According to CIUF - Interuniversity Council of the French Community - an academy is a higher education institution created from association of universities (Decree of 31st march 2004). Two or more universities can associate themselves to create a higher education academy to promote missions related to education and research with international and inter communities' collaborations.

[2] The main mission of these associations is to seek a better collaboration between its partner members in the areas of education, research, provision of services and student policy.



Yoav Arbel
Israel Antiquities Authority, Israel

The Archaeology of Urban Change: 19th Century Jaffa

Settled almost continuously since its foundation ca. 1800 BCE (Kaplan, 1972,75), Jaffa is one of the oldest still-functioning harbor towns on the Mediterranean coast (Figure 1). Its population over the ages – Canaanites, Phoenicians, Jews, Arabs and others - was often subdued by foreign invaders vying for the harbor, the trade routes passing near the town, and the fertile agricultural lands surrounding it. Egyptian pharaohs, Hellenistic kings, Roman and Byzantine emperors, Arab Khalifa, Crusader signors, Turkish sultans, and French and British generals all dominated the town at one time or another. Jaffa consequently experienced many fluctuations in its political, economic and social fortunes. Recent archaeological excavations have indicated significant expansion in the early Hellenistic (4th-3rd centuries BC), Byzantine (4th-7th centuries AD) and Crusader (1099-1268 AD) periods, and withdrawal to the boundaries of the ancient mound in others (Arbel, 2011,191, Foran, 2011,112, Peilstöcker and Burke, 2011,177). Yet a turning point in the city's history was reached in the 19th century, marked by intriguing efforts of the Turkish authorities to introduce modernity while preserving its Muslim-Ottoman character. Neo-classic government buildings were built next to vaulted Arab coffee houses, church steeples rose near minarets of mosques, serpentine lanes linked newly paved streets, and local wares were sold in Jaffa's markets next to imported commodities. Unlike earlier phases of prosperity, the urban growth and profound changes of this period were irreversible.

Jaffa in the 19th century - historical background

The first three decades of the 19th century were a time of recuperation from Napoleon's brief but destructive conquest in 1799 and the ensuing struggles between regional commanders and Ottoman agents. Jaffa's Ottoman-appointed governor Mohammed Agha Abu Nabbut spared no measures in extracting the revenue necessary for reconstruction. Abu Nabbut rebuilt Jaffa's fortifications, boosted its commerce with new bazaars, beautified it with new fountains, and invested in Islamic religious institutions (Kana'an, 2001). During that period European influence was felt mostly in Istanbul, while provincial towns such as Jaffa retained their traditional character.

In 1831, while the Ottomans were laboring to implement reforms after European models, the Egyptian armies of Ibrahim Pasha occupied large segments of the empire, as far north as Syria. The Egyptians introduced to the former Ottoman provinces a centralized government based on efficient administration, curbed the power of local pashas, improved security on the roads and protected the oppressed non-Muslim minorities. Jaffa was the closest harbor to Egypt on the Syrian coast, thus it was there that Ibrahim Pasha established his headquarters. The town benefited considerably from that relationship, enjoying improvement in administration, security, health and commerce. There were also demographic repercussions, with the settling of Egyptian veterans and peasants in new villages built around the city, and the establishment of a Jewish community (Kark 1990,56).

Nine years later the Ottomans expelled Ibrahim's armies from their Asian domains with the military assistance of European powers, which preferred the enfeebled and more controllable Ottomans over the ambitious Egyptians. The Ottoman reforms (tanzimat) and the growing European influence that characterized post-Egyptian Ottoman rule met severe and sporadically violent Muslim opposition. The Ottoman government responded with stiffer provincial control, at the expense of previously autonomous or independent local pashas and tribal strongmen. Heavy taxation on the one hand and recurrent conflicts on the other turned small farmers into tenants serving governors or urban lords who could protect them. Cities such as Jaffa enjoyed a larger population, improved security, vibrant commerce, and political significance. European involvement increased simultaneously, manifested in the rise in the power and the influence of foreign consular officials in public life (Blumberg, 2007,151-162).

The vigorous policies of Sultan Abdul Hamid II (1876-1909), along with local initiatives, led to rapid modernization of provincial cities during the closing decades of Ottoman rule. The impact of European culture, wares, schools and religious institutions was felt in all walks of life. A population of between 1500 and 3000 in the first decade of the 19th century surged to over 20,000 by that century's conclusion (Kark, 1990,145-151). To answer to the population growth Jaffa expanded well beyond its derelict fortifications. New public buildings were erected, and existing ones extended (Figure 2). Some of the "very narrow, uneven and dirty streets" (Wittman, 1803,129) were still there in 1899, but new roads were paved in vacant grounds. The quay, until then a narrow strip of sand within a reef-blocked anchorage evolved into a bustling harbor. Endemic epidemics were checked through the construction of drain and sewer systems, the removal of cemeteries and the establishment of modern hospitals. Open squares and modern public buildings were added to the "curious profile of flat-roofed houses, rising step by step one above the other" (Rogers 1865,21). Enjoying foreign consular protection, Christian and Jewish communities flourished in the city as well as in newly established settlements in its surroundings, such as the German colonies and the neighborhoods that within a short period of time would evolve into the city of Tel Aviv.

Extensive textual, cartographic, artistic and photographic records from the time attest to the transformation described above. Archaeology has recently added another dimension to the multi-faceted research.

The archaeology of 19th century Jaffa

The Israeli Antiquities Law makes development in designated areas conditional to prior archaeological investigation. As a consequence, since the early 1990's, salvage excavations, most of which by teams of the Israel Antiquities Authority, have preceded large-scale renovation of infrastructure in Jaffa's streets and tourist-oriented projects in various sites in the city (Peilstöcker, 2011,21). Remains from the late 18th to the early 20th centuries were found superimposed on earlier strata in most of those excavations. These relatively recent remains were exposed, recorded and studied in the same way as any archaeological layer. To investigate such records-rich periods, excavators coordinated information derived from archaeological remains with travelers' records and artistic impressions, historical maps of varying resolution and accuracy, and century-old photographs. As libraries and archives in various countries posted digitized material on the Internet, sources became more accessible and unknown ones emerged. The experience of the last two decades of salvage work in Jaffa has demonstrated the potential of this inter-disciplinary effort in a broad span of aspects.
Excavations have been conducted within extant 19th century structures and compounds, in those that have been incorporated into modern complexes, as well as under the sprawling modern urban landscape where nothing of that period was visible. The following examples illustrate the variability of the work and some of the affiliated discoveries.

The Ottoman Police station

The Ottoman police and prison compound, built in the late 1880's, consists of three elongated two-storied buildings and several yards (Figure 3). It was erected on the location of a multi-angled bastion that protruded from the northeastern corner of Jaffa's Ottoman fortifications. The bastion clearly appears in four 19th century maps (Shacham, 2011,fig.13.12-13, 13.15, Kark 1990, 64, Map 7) and in a panoramic drawing by J.M.W. Turner from 1837. Several segments of this structure were unearthed in the excavations, contributing details on the structure, dimensions and course of Jaffa's defenses in this spot (Arbel, 2009). A tower that probably belonged to the late eighteenth century walls that fell to Napoleon also came to light, identified through comparison with a 1799 military map drawn by Colonel Jacotin, who served with the French army (Shacham, 2011,fig.13.8). Dozens of mid-19th century graves indicated the spreading of the northern Muslim cemetery to the derelict bastion's grounds prior to the building of the police compound, a detail unattested to in any known historical record. At the same time, excavations under the French Hospital constructed in 1878 exposed the remains of Jaffa's southeastern and strongest 19th century fort, known in the period as the Sidney Smith or the English fort, and of another 18th century tower (Re'em, 2010).

The Ottoman city gate

Only one substantial land gate existed in Jaffa's 19th century city walls, named after its builder, Mohammed Abu Nabbut. Others knew it as the Jerusalem Gate, after the most popular destination of most of the travelers passing out of it. People entering Jaffa would cross a bridge over the moat, reach a fortified yard with an ornate fountain at its northern wall and turn southwards toward the actual entranceway, built into a tower with four rounded buttresses. The entranceway still stands intact, although cluttered with modern additions and in little use by pedestrians. The fountain is also complete, while segments of the tower's buttresses can be traced within a new shop, a yard and a restaurant. Most other parts of the complex were razed to make way for new streets and buildings, yet recent excavations allow its almost meter by meter reconstruction. Meaningful details that do not appear in the historical records came to light, such as the arcaded structure of the bridge that crossed the eastern moat, and the moat's exact course along Jaffa's fortifications. The arches remain stable and continue to support traffic of a volume and weight which its early 19th century planners could never have envisaged. This segment of the moat can be linked to another part discovered next to the northeastern bastion, providing a more accurate delineation of the course of the defensive ditch. The drain system of the fountain was also discovered, as were the foundations of the wall sealing the gate's yard from the west.

HaZorfim ("Jewelers") Street

Maps and artistic representations show that until the middle of the 19th century the eastern slopes of the Jaffa mound, where HaZorfim Street is located, were practically vacant (Shacham, 2011,fig.13.13). They were probably cultivated, as are several bare plots that can still be found within the limited scope of the Old City of Jerusalem. Modern guidelines could be implemented when urban expansion was planned to occupy this large free lot during the second half of the 19th century. Maps from 1863 and 1878 show the area already built and settled, and the new street appears as it does today, effectively crossing the city north to south along its eastern limits (Shacham, 2011,fig.13.15, 13.19). Archaeological excavations (Arbel, 2010) offered a finer resolution to the unfolding scene of modernization. The excavations met massive volumes of earth, introduced to this area prior to construction, and an elaborate drain and sewer system, installed under the street and taking advantage of the northwards declining topography. Well preserved segments of stone paving were uncovered under the modern asphalt road. Draining and paving are highlighted in historical documents as having been considered immediate necessities to the rapidly evolving town, and among the chief reasons for the establishment of a municipality in 1871 (Kark 1990:204). These records tell us what was done. Archaeology offers invaluable details regarding location, methods and exact time.

The Jaffa orchards

Jaffa's gardens and orchards are mentioned in records as early as the Papyrus Anastasi from the late 13th century BC, and in several sources through various periods. During late Ottoman times they reached their apex of fame, surviving in memory to this day through the brand 'Jaffa oranges'. Due to the high value of the eastern orchards, that land was among the last to be paved and built over as the city expanded during the 19th century. The process was nonetheless inevitable, and could be delayed but not stopped. Today, other than in a few private gardens the orchards survive only in historical documentation. The main area where they blossomed is now occupied by housing complexes, restaurants, workshops and a vibrant flea market. Excavations that took place in the narrow and crowded commercial streets (Figure 4) exposed remains from various ancient periods but also several wells and irrigation channels that watered the orchards (Peilstöcker et al., 2006, Arbel, 2008). When mapped along with derelict but still standing water wheel structures, the wells and channels offer a new perspective over the agricultural system, otherwise known only through picturesque but highly impressionable textual and artistic representations.
Another archaeological project of much consequence took place at the historical harbor – the only non-religious institution that retains its original function to the present, although in markedly reduced scale (Haddad, 2009). The excavations there added information about the structure, workings, installations and fortifications of the harbor during the 19th century, and over the alteration and improvements it underwent.

The contribution of artifacts

The archaeological input does not end at the analysis of structures and urban planning. Artifacts too modern to usually be considered in the context of archaeology complement the scenes emerging from extant historical buildings or the foundations of buildings that have been demolished. Large numbers of shards of glass bottles and porcelain bowls were found in the excavations, many carrying the stamps of their producers. When traced to their factories they reveal trade networks and cultural affinities, and can also help in dating archaeological strata. Coins found in the excavations, which come from a wide variety of Mediterranean and European countries, and smoking devices such as Turkish and European pipes, offer similar types of information. Firearms and their ammunition attest to conflicts within the city as well as to political alliances, in this case between Germany and the Ottoman Empire prior to WWI. Far from the forsaken harbor of the late eighteenth century that served modest trade and pilgrim traffic, Jaffa in the closing years of the 19th century was the product of rapid modernization and internationalization, where Europe met the Levant in a wide array of spiritual, economic and material aspects. We can read about it in texts, follow it through historical maps and see it through the eyes of artists and photographers. Archaeology offers the means to test our conclusions through the actual physical remains, and sometimes adds evidence when we are confronted with contradicting sources.

Two additional factors emphasize the importance of having access to these remains:

1. Investigation of history based on textual records as well as cartographic and artistic subsidiaries requires caution due to what has been dubbed the "tyranny of the text" (Champion, 1990,91, Papadopoulus, 1999) - the disproportionate and uncritical reliance on the attractive but subjective and inescapably biased testimony of historical records. Travelers, scholars, soldiers, diplomats and pilgrims who visited the town during the 19th century describe a chaotic scene of filth, disease and stagnation, thriving under governmental corruption and ineptness. Yet material remains emerging from systematic excavations and a closer analysis of those sources prove that these impressionable testimonies missed much of the actual processes that were taking place during the same time, and which can best be observed in retrospect. In its struggle to recover, the fledgling Ottoman empire, "the sick man of Europe", not only attempted political and religious reforms but opened its cities and towns, including peripheral ones, to far-reaching innovation which affected all facets of life. The associated material evidence can be recovered from its soil, and offer non-partial lenses to examine the realities of the time, untainted by the colorful but distorting perspective derived from the experiences of those who lived through it.

2. Jaffa of the 19th century was mostly obliterated during the first half of the 20th century, first by extensive Ottoman renovations and later in the violent conflicts of the Arab Revolt (1936-1939) and Israel's 1948 Independence war. Most of the larger public and religious buildings remain, but expansive parks, archaeological sites, art galleries and parking lots replace the crowded houses, streets, yards and markets. In many cases, therefore, historical records cannot be tested against objective remains other than through what comes to light in archaeological excavations.

Yoav Arbel
Israel Antiquities Authority, Israel

Summary

The results of research in the sites mentioned above and in many others that have been conducted in Jaffa over the last two decades, in conjunction with information derived from textual, cartographic, artistic, photographic and architectural evidence, has added new dimensions to what we know of Jaffa's more recent history. The processes which transformed a forsaken backwater harbor into a cosmopolitan center can now be followed not only through the testimony of eye witnesses, whose perspective was inevitably influenced by personal background, interest and talents, but also through the analysis of mute but objective material remains. All of these factors open the option for turning Jaffa of late Ottoman days into a case study in an inter-disciplinary investigation of historical urban change.

Legenda:

Figure 1: Old and New: General view of Jaffa, looking southwest. At the center, St Peter's Church (1898), replacing Jaffa's medieval citadel. Below it the 17th century Armenian and Franciscan monastic compounds and the late medieval Mosque of the Sea.
Figure 2: Jaffa's late 19th century late Ottoman civic center.
Figure 3: Remains from the Crusader period and from the 18th and early 19th centuries in the back yard of the 1880's Ottoman police compound.
Figure 4: Excavations at the modern Flea Market, the location of Jaffa's orchards.

References

Arbel, Y. Yafo, *Flea Market Complex,* in "Excavations and Surveys in Israel", n. 120, 2008.

Arbel, Y. *Yafo, the Qishle, Preliminary Report* in "Excavations and Surveys in Israel", no. 121, 2009.

Arbel, Y. *Yafo, HaZorfim Street, Preliminary Report* "Excavations and Surveys in Israel", no. 122, 2010.

Arbel, Y. The Hasmonean Conquest of Jaffa, Chronology and New Background Evidence. in Peilstöcker, M. and Burke, A.A. *The History and Archaeology of Jaffa 1*, Cotsen Institute of Archaeology Press, Los Angeles, 2011.

Blumberg, A. *Zion before Zionism, 1838-1880*, Devora, Jerusalem, 2007.

Champion, T. Medieval Archaeology and the Tyranny of the Historical Record, in Austin, D. and Alcock, L. *From the Baltic to the Black Sea*, Studies in Medieval Archaeology, Unwin Hyman, London, 1990.

Foran, D. Byzantine and Early Islamic Jaffa, in Peilstöcker, M. and Burke, A.A., *The History and Archaeology of Jaffa 1*,Cotsen Institute of Archaeology Press, Los Angeles, 2011.

Haddad, E. *Yafo Harbor, Preliminary Report*, in "Excavations and Surveys in Israel" no. 121, 2009.

Kana'an, R. *Waqf, Architecture, and Political Self-Fashioning, The Construction of the Great Mosque of Jaffa by Muhammad Aga Abu Nabbut*, in "Muqarnas" no. 18, 2001.

Kaplan, J. *The Archaeology and History of Tel Aviv-Jaffa*, in "The Biblical Archaeologist," n. 35.3, 1972.

Kark, R. Jaffa, *A City in Evolution (1799-1917)*, Yad Izhak Ben-Zvi, Jerusalem, 1990.

Papadopoulus, J.K. *Archaeology, Myth-History and the Tyranny of the Text*, Chalkidike, Torone and Thucydides, in "Oxford Journal of Archaeology", no. 18(4), 1999.

Peilstöcker, M. *The history of Archaeological Research in Jaffa, 1948-2009*, in Peilstöcker, M. and Burke, A.A., *The History and Archaeology of Jaffa 1*, pp.17-32. Cotsen Institute of Archaeology Press, Los Angeles, 2011.

Peilstöcker, M. and Burke, A.A. *Preliminary Report for the 2007 Ganor Compound Excavations*, in Peilstöcker, M. and Burke, A.A., *The History and Archaeology of Jaffa 1*, Cotsen Institute of Archaeology Press, Los Angeles, 2011.

Peilstöcker, M. et al. *Yafo, Flea Market Complex*, in "Excavations and Surveys in Israel" no. 118, 2006.

Re'em, A. *Yafo, The French Hospital, 2007-2008, Preliminary Report*, in "Excavations and Surveys in Israel", no. 122, 2010.

Rogers, M. E. *Domestic Life in Palestine*. Poe & Hitchcock, Cincinnati, 1865.

Shacham, Z. *Jaffa in Historical Maps*, in Peilstöcker, M. and Burke, A.A., *The History and Archaeology of Jaffa 1*, Cotsen Institute of Archaeology Press, Los Angeles, 2011.

Wittman, W. *Travels in Turkey, Asia-Minor, Syria and across the Desert into Egypt, during the years 1799, 1800, 1801*, London, 1803.

Ivan Brambilla
Politecnico di Milano, Italy

Potsdam and Land Brandenburg: Monumentality as Principle for Urban and Territorial Construction[1]

During the Prussian Kingdom (1701/1918) the Royal Family took up residence in Potsdam. The city, which was originally called *Potzupimi* and has Slavic origins, was founded around the 10th century on the banks of the river Havel. Potsdam was just a small fishing town until the first half of the 16th century. In 1660, after the end of the Thirty Years War (1616/1648), Frederick William of Hohenzollern, the Great Elector of Brandenburg (born in 1620 and duke from 1640 to 1688), decided to turn the town into his second official residence and therefore started a policy of urban development of the city by building a huge city palace. This choice triggered a process of urban and territorial transformation, which strongly influenced the futures both of the city itself and the Land Brandenburg in general.

The Great Elector chose Louis XIV's Palace of Versailles as his contemporary architectural model, which resulted in a colossal royal palace in the countryside, not too far from the capital city. As a result, since then the link between Potsdam, Berlin and the whole Brandenburg area has been an intrinsic feature of the city's essence. Particularly, the relationship with the territory comes from sharing a common identity matrix: as it was already happening in the city of Potsdam, the process of anthropic transformation of the Brandenburg region revealed itself to be the representation of the sovereign power through the building of numerous castles, villas, parks and gardens between the 18th and the 19th century. Building a city palace in Potsdam meant carrying out a policy of territory development, thus justifying the building of a series of castles in the whole Land Brandenburg, starting from the one in Berlin, the oldest, which had been built on the Museuminsel at the beginning of the 15th century.
The city palace of Potsdam could be defined as an architectural landmark, showing the newly acquired monumentality of the city for the first time in history. Focusing on the scale of the palace in relation to the pre-existing village, it can be concluded that its disproportionate size results in a privileged relationship with the territory rather than to the adjoining buildings. This phenomenon was destined to influence the further development of the city, whose plan, during the Baroque Age, would revolve around the palace, considered as the stronghold of the new structure, based on two- to three-story buildings organized in blocks, with gardens in the middle and aligned along the streets.
The morphology of Potsdam, its facets and its link to the past are characterized by its own relationship with the environment, that is to say, with water above all. In the project report of a masterplan for urban reconstruction in 1997, Klaus Theo Brenner highlights the centrality of this relationship with water in defining a never-ending continuity between the city and its surroundings: *"Potsdam and Berlin are connected through the Havel and Spree. In contrast to the GDR period, today this connection has to be consciously emphasized. The history of the transformation of a natural environment influenced by water into a cultural landscape is long and full of events and episodes. These extend from the actual creation of a center at Berlin/Coelln, the Berliner Stadtschloß and the Museumsinsel up to the center of Potsdam with its own Stadtschloß, Baroque city constructions and parks. Schloß Charlottenburg, the Pfaueninsel, Sacrower Park, the Jagdschloß Glienicke, Babelsberg, Cecilienhof, the Brauhausberg with the Einsteinturm (designed by Mendelsohn) all lie between Berlin and Potsdam…"*.[2]

Monumentality is a distinctive landmark of Potsdam and the Land Brandenburg. It is also the representative solemn character, which peremptorily translates the relationship between the identity of the work and its being collectively shared. The concept of monumentality is strictly linked to the celebration of the event and it has a central role in expressing shared values, being in fact a necessary condition since it is an active part of the artistic celebration.
Frederick II of Prussia, known as Frederick the Great (born in 1712 and king from 1740 to 1786), strongly contributed to increasing the monumental character of the city. During his kingdom he permanently moved his official residence to Potsdam and initiated important building activities.
Frederick's cultural depth, together with his inborn sensitivity for arts and his passion for architecture, positively impacted the urban transformation of the city. The king's intentions, aiming at giving the city a noble character and at making it worthy of being a royal residence, needed to face the real urban nature of the city, which was at the time seat of the Prussian Military Staff and Army, since Frederick William I, the Soldier-king as well as Frederick II's father, had previously turned it into a garrison town. This made the history of the city very ambiguous, without hindering the process of characterization of the city in aristocratic terms.
Among Frederick's building activities, two in particular strongly impacted the city's destiny: the building of the Sanssouci summer palace and the terraced vineyard at its front, designed by the main royal architect, Georg Wenzeslaus von Knobelsdorff, and the façade renovation of pre-existing middle-class residential facilities, which deeply changed the face of the city.
A key factor in this venture was the input from Count Francesco Algarotti, a Venetian aristocrat, man of letters, collector and a great connoisseur of arts and architecture, as well as a passionate promoter of Andrea Palladio. Friend and advisor of the king, Algarotti showed him a series of engravings with noble palaces façades from various Italian (Vicenza, Verona and Rome) and European cities (London, Amsterdam, Paris and Nancy), to be later used as a guideline for the architectural reconfiguration of the new Potsdam. Algarotti himself was at the head of this operation, working side by side with Frederick II, who accomplished the design of the façades; Algarotti and Frederick II defined the general parameters of the works and entrusted the court architects to carry out the job between 1752 and 1776.

In 1753 Algarotti said: *"I was in Vicenza where I saw what I hope I will see in Potsdam one day"*.[3] Vicenza is therefore the real model at the base of the building program promoted by Frederick II, both due to his predilection for Palladio's architecture[4] and since the urban development scheme adopted in Potsdam is itself derived from the Palladian image of Vicenza. Palladio laid an alternative urban plan which was only partially realized upon Vicenza's medieval urban structure. In fact, rather than being an architectural expression of a definite type, Palladio's palaces tend to be evocative fragments of possible architectural ideas, which were never totally expressed except in their façades. Since they had the role of showing the social prestige of the noble owner, façades were generally completed. The independent unitary system of the Palladian façades of Vicenza generated an image which will be considered as a reference point to redesign the city of Potsdam.
Frederick II and Algarotti aimed at concretely creating an *Analogue City*, modeled on Vicenza: where the theme of façades as a copy of buildings belonging to other contexts – built or merely designed – was considered the vehicle of transmission of architecture. Being free from any specific typology, façades were simply juxtaposed to middle-class residential buildings. Their aim wasn't to celebrate the magnificence of the royal palace, but instead to celebrate the city itself in its role of royal family's residence. The distribution of the façades had nothing to do with ownership lots, because there's no real correspondence with the inner composition of the buildings. Aiming at being part of an established perception scheme, the façades were located in key-points of the city, at crossroads or where they could be best seen from the royal palace.
The relationship of continuity among the internal logics of the building, the façade and the city is interrupted by overlaying a scenic system – independent and self-referential – upon the inherited urban structure which dialogues first with the landmark of the city palace, without questioning its hierarchically dominant role with the rest of the city.
The first operational phase of the program promoted by Frederick II was characterized by the deep division between the building's typology and its urban character, which is the case of all the Palladian palaces (1753/'55). Over time, this first phase will develop into most accomplished achievements arising from a complex process of reworking of typology and a more conscious relationship with history. Palazzo Barberini, located in Humboldstraße 5-6, (1771/'72), is emblematic in this regard: it's not just a copy of the façade but also a renovation of the constituent elements of the palace from the reference model.5 This renewed architectural unity does not in any case betray the characterization program of the monumental city, which is the main objective of Frederick II.

The rhetoric and celebratory vocation characterises the city of Potsdam and the territory of Brandenburg. The architectural masterpieces built by the enlightened patron, who was first Crowned Prince and later became King Friedrich Wilhelm IV (born in 1795 and king from 1840 to 1861), pursue the principle of monumental characterization promoted by Frederick II. These works, in fact, translate the construction of an architectural scenario, applied to the building fabric of the city, in the configuration of landscapes, where the new elements are inserted as visual backdrops perceived from predetermined angles. Moreover, the special relationship with Italian architecture introduced by Frederick II, acquired levels of interest and extraordinary depth of knowledge in Frederick William IV's time, becoming the main reference model for Potsdam. Works such as the extraordinary architectural complexes of Charlottenhof and Glienicke, the castle of Babelsberg, the Friedenskirche, the Belvedere on Pfingstberg, the Orangery – and so on – made by masters like Schinkel, Persius, Stüler and Hesse, re-elaborate, with greater awareness, evocative images and architectural elements derived from other contexts. These were used as the objective data of a compositional syntax oriented not only to the construction of new buildings but also of true and proper architectural landscapes. Towers, clock towers, pergolas, paths, volumes and porches are reassembled to reproduce architectural landscapes, subordinating the typological reasons to the context. The copy was exploited beyond the façade, thus embracing the theme of the landscape in a wider sense also: natural and architectural elements are adopted to create *Analogue Landscapes*.

With Frederick William IV Potsdam undertook the character of a real *cultural landscape* where allusions, evocations and even explicit references live together. As natural environment, the place plays the main role, being at the same time the setting and the main character of the play. Therefore Potsdam confirms its relationship with the natural context by melding its two most distinctive marks – nature and its monumentality – into an indissoluble bond, masterfully achieved by the extraordinary planning contributed by Lennè's works.

Monumentality is a conceptual invariant independent of any age and style. Flashing forward, we find a masterpiece in Potsdam – a milestone for modern architecture – which clearly expresses this. In Erich Mendelssohn's Einstein Tower (1917/'24) two seemingly antithetical themes converge in perfect synthesis: modern architecture and monumentality – generally considered by followers of modernism as a peculiar aspect of the reviled historicist architecture. Einstein Tower, a symbol of German architectural expressionism, is able to perfectly fit into the *cultural landscape*, defining a new way to express monumentality.
The concept of monumentality, in fact, is never univocal but receives different connotations from time to time. In particular, the case-studies discussed here – namely the city palace by the Great Elector Frederick William I, Frederick II's façades and Frederick William IV's architectural landscapes – highlight three concepts which sum up the possible meanings of monumentality – although they are not exclusively reducible to these.
The first aspect has to do with the huge dimension. The monumentality of Potsdam Palace lies in the comparison with the pre-existing village. Such a size recalls the concept of monument, regardless of its architecture and composition, being self-commemorative and self-centered. The same principle is also found both in the city's architectural landmarks, as well as in the other numerous important buildings dotting the territory of Brandenburg.
The second aspect comes out of the relationship between Frederick II and the city: monumentality was a goal for him. Guided by a precise rhetorical intent, he pursues his intention in the façades of urban buildings but also in the project of Sanssouci and in realizing a series of architectural elements whose aim was to ennoble the city – that is to say imposing doors, obelisks and domes.
The third aspect, instead, is the distinguishing feature of the works of the masters who worked for Frederick William IV, Lennè, Schinkel and his pupils, in which the artistic value of the work predominates over celebratory-rhetoric aspect. I quote Giorgio Grassi to explain these ideas: *"…monumentality in architecture is the particular beauty of architecture itself. It is its distinctive characteristic. It can be considered a concrete and long-lasting testimony and in this sense, there is no other art to which it can apply better than architecture. I'm tempted to admit that architecture is monumental by itself"*.[6]

The monumental vocation, which marked the history of Potsdam and Brandenburg, now orients their present development, after a long phase where the destinies of the city and its territory followed different paths.[7] Whereas the Brandenburg was spared and could therefore preserve its historical identity and the integrity of its natural landscape, the city was destroyed by the British air raids and by the ruinous building policy of the GDR – not to mention the historical heritage demolished by the regime. After the fall of the Berlin Wall, Potsdam was disfigured, deprived of some important architectural elements – among which the city palace and all the buildings embellished by Frederick II's façades – and it was morphologically de-structured. A few years after the German reunification Burelli wrote: *"For forty years Potsdam had lived the historical enigma of the division of the world, a division which was experienced in its parks, which divided palaces and villas. For forty years the city had lived in the amnesia of its past because it was driven by great future plans, so now, at dusk, it turns back naively looking for its lost identity"*.[8]
Potsdam's lost identity is the key to interpreting the current architectural proposals for the city center. The city palace is currently being reconstructed in philological terms; the copy of Palazzo Thiene in Neuen Markt 5 has already been reproduced – although subject to a controversial modern reworking; the Havel Bank block will soon be volumetrically redefined, which also includes the reconstruction of the façades of Palazzo Barberini, Palazzo Pompei and the so-called Palazzo Chiericati; and there are many future predictions which are important for the redefinition of the urban space – among which the reconfiguration of the area of the campus of Applied Sciences and the reopening of the Stadtkanal. These projects are meant to replace the idea of city promoted by the logic of urban development during the years of the GDR. It's all about a series of guide buildings that explicitly recall the city's history and its image: the new proposals for urban volumes recall the nature of the city and its history, whereas stylistically rebuilt scenes can be considered bearers of a denied memory.

Frederick II's city orientates its present changes in two ways: both because it is being largely rebuilt and because it's taken as a methodology model. In fact, just as the façades of Frederick II renovated the urban centre of Potsdam apart from a real correspondence to the buildings to which they were applied, the present creation of a *new-old* face of the city doesn't comply with any typology, technique or working nature of the buildings, which, on the contrary, simulate an ancient identity, accomplishing contemporary building, functional and performing requirements at the same time.
The fact of regaining possession of its own urban identity, promoted by the municipality and strongly supported by the residents, gives rise to perplexity in disciplinary terms, mainly because of the conscious renouncement of the modern architectural language. Though this is comprehensible, it would be superficial to simplistically judge this operation in negative terms, since it arouses matters which are of great interest and highly topical. First of all it underlines the culturally-speaking proactive role of memory in the present German society which – in a more or less legitimate way – wants to forget its more recent past by trying to discover remote roots of its identity, common to the re-unified Germany. Secondly, this attitude is a symptom of the crisis of the contemporary architectural culture. The long-desired process of "democratization" of architecture, which relies on the freedom of individual expression of every single architect as a symbol of the conquests of democracy in our society, is inadequate to represent the topical requirements of the citizens in Potsdam. The community, on the contrary, considers the total abandonment of contemporary architecture as the most genuine and true expression of the democratic will and of the free market laws, which are the two pillars of our global liberal-democratic system. Only *history itself* will tell if this aspect is a possible path to follow – as it was when Aldo Rossi himself authoritatively introduced it with the fragment of Palazzo Farnese in the block of Schützenstraße in Berlin at the end of the past century – or it is simply the negative epilogue of the present political-social system. Now, what can be objectively observed is that the present urban reconfiguration of Potsdam clearly shows how the idea of urban monumentality promoted by Frederick II, three centuries after his birth, is still able to act as a propelling element of the city's changes in the 21st century, strongly relocating history at the very centre of the contemporary architectural debate.

Notes

[1] This essay comes from a study on the influence of Italian architecture in Potsdam and is the result of cooperation among Italian and German researchers. An important event is the conference organized on January 13th/14th this year by Annegret Burg (Fachhochschule Potsdam) and Michele Caja (Politecnico di Milano) at the Fachhochschule Potsdam, entitling *"Potsdam & Italien: Die Italienrezeption in der Potsdam Baukultur"*.
[2] Brenner K. T., *Potsdam – A City at Water's Edge*, in AA. VV., Potsdam: Stadt am Wasser, Gebr. Mann, Berlin, 1997.
[3] Bischoff F., *Correspondance de Fréderic Second Roi de Prusse avec le Comte Algarotti*, Berlin, 1837 (P. 99).
[4] The buildings of Palladio that are replicated are five: Palazzo Porto-Barbarano, Palazzo Valmarana, Palazzo Thiene, Palazzo Angarano and Palazzo Giulia Capra.
[5] In the above mentioned meeting Michele Caja and Silvia Malcovati focused on these two points: the operational chasm of the unity between typology and city and its subsequent reconquer. Pointing out the division between typology and its architectural representation, Caja is skeptical about the operation of Frederick II. He talks about Potemkin Villages, and he quotes to Mielke's words about Potsdam, who speaks of *Potemkin architecture in disguise* (F. Mielke, Das Burgerhaus in Potsdam, Tubingen 1973, p.306) and Loos's essay (A. Loos, *Die Potemkinsche Stadt*, 1898), in which he criticizes the buildings constructed on the Ring in Vienna during the second half of the 19th century. Malcovati, instead, esteems the positive results in the long-term highlighting how, over time, the projects re-confirm the relationship between the typology and the urban character.
[6] Grassi G., *Risposta a tre domande sulla monumentalità*, in Patetta L. (edited by), *La monumentalità nell'architettura moderna*, Clup, Milano, 1982 (pp. 155-156).
[7] In 1990 Potsdam became the capital of the Land Brandenburg.
[8] Burelli A. R., *Architettura e amnesia*, in «Casabella», n. 591, 1992 (pp. 30-31).

Legenda

Potsdamer Stadtschloß, photo by Giovanni Chiaramonte, 2011
Breite Straße, photo by Giovanni Chiaramonte, 2011
Glienicker Brücke, photo by Giovanni Chiaramonte, 2011

Bibliography

Ackerman J. S., *Palladio*, Einaudi, Torino, 1972.
Algarotti F., *Saggio sopra l'architettura (1756)*, Il Polifilo, Milano, 2005.
Barbieri F., *Vicenza & Palladio*, Eri, Torino 1987.
Beltramini G. (et al), *Palladio nel nord Europa: libri, viaggiatori, architetti*, Skira, Milano, 1999.
Bischoff F., *Correspondance de Fréderic Second Roi de Prusse avec le Comte Algarotti*, Berlin, 1837.
Borkowski E., *Sanssouci: il parco e i castelli*, EdiCart, Legnano, 1993.
Brenner K. T., Albers B., Brands L., *Potsdam: stadt am wasser ein Masterplan,* Gebr. Mann, Berlin, 1997.
Burelli A. R., Gennaro P., *Progetti brandeburghesi,* Libria, Melfi, 1997.
Burelli A. R., Gennaro P., *Entwürfe für Potsdam: 1991-2001*, Ergon, 2001.
Burlington, *Fabbriche antiche disegnate da Andrea Palladio Vicentino*, Londra, 1730.
Campbell C., *Vitruvius Britannicus or the British Architect*, London, 1731.
Jung K. C., *Potsdam, Am Neuen Markt*, Gebr. Mann, Berlin, 1999.
Chiaramonte G., *Et in Arcadia Ego*, Ultreya-Itaca, 2011.
Consonni G., *La difficile arte: fare città nell'era della metropoli*, Maggioli, Santarcangelo di Romagna, 2008.
Giersberg H. J., Schendel A., *Potsdamer veduten Stadt-u. Landschaftsansichten vom 17. bis 20. Jahrhundert*, Potsdam-Sanssouci, Generaldirektion d. Staatl. Schlösser u. Gärten Potsdam-Sanssouci, 1984.
Gülzow A., Hermann P., *Der Potsdamer Stadtkanal*, Strauss, Potsdam, 1997.
Günther H., Harksen S. (edited by), *Peter Joseph Lenné: Katalog der Zeichnungen*, Wasmuth, Tübingen-Berlin, 1993.
Günther H., *Peter Joseph Lenné: Gärten, Parke, Landschaften*, Deutsche Verlags Anstalt, Stuttgart, 1985.
Ibbeken H. (edited by), *Ludwig Persius: das architektonische Werk heute*, Axel Menges, Stuttgart-London, 2005.
Kitschke A., *Italien in Potsdam: Ein Spaziergang durch Potsdam und den Park von Sanssouci*, Italienisches Kulturinstitut, Berlin, 2001.
Maglio A., *L'Arcadia è una terra straniera*, Clean, Napoli, 2009.
Mielke F., *Das Bürgerhaus in Potsdam*, Wasmuth, Tübingen, 1972.
Palladio A., *I Quattro Libri dell'Architettura*, Venezia, 1581.
Patetta L. (edited by), *La monumentalità nell'architettura moderna*, Clup, Milano, 1982.
Pierini S., *Sulla facciata: tra architettura e città*, Maggioli, Santarcangelo di Romagna, 2008.
Puppi L., *Andrea Palladio*, Milano 1999.
Ronzoni M. R. (et al.), *La nuova monumentalità urbana*, E.A. Fiere di Bologna, Faenza, 1990.
Schäche W., *Am Neuen Markt 5: Ein Haus in Potsdam*, Jovis, Berlin, 2003.
Schneider R., *Potsdam aus der Luft*, Nicolaische Verlagsbuchhandlung, Berlin, 1992.
Semino G. P., *Schinkel*, Zanichelli, Bologna, 1993.
Senat von Berlin Arbeitskreis Schinkel 200 (edited by), *Schinkel in Berlin und Potsdam: Führer zum Schinkeljahr*, Nicolaische Verlagsbuchhandlung, Berlin, 1981.
Watkin D., *Mellinghoff, Architettura neoclassica tedesca*, 1740-1840, Electa, Milano, 1990.
Wittkower R., *Palladio e il palladianesimo*, Einaudi, Torino, 1974.
Wittkower R., *Principi architettonici nell'età dell'Umanesimo*, Einaudi, Torino, 1962.
Volk W., *Potsdam: Historische Staßen und Plätze heute*, Verlag für Bauwesen, Berlin, 1988.
Zieler O., *Potsdam: ein Stadtbild des 18. Jahrhunderts*, Gebr. Mann, Berlin, 1999.

2. Essay in the book

Gros P., *La domus romana e la casa di città secondo Andrea Palladio*, in ID, *Palladio e l'antico*, Marsilio, Venezia, 2006.
Forster K. W., *Concetto e corpo di un edificio: come la vicenda di palazzo Thiene si promulga nella fortuna dell'opera tra carta e mattone,* in Beltramini G., Burns H., Rigon F. (edited by), *Palazzo Thiene a Vicenza*, Skira, Milano, 2007.
Maffioletti S., *Nel paesaggio architettonico di Potsdam*, in AA. VV., *Pietre mediterranee*, Edizioni Lybra Immagine, Milano, 1999.
Berlino-Brandeburgo, in *È tempo di viaggiare, viaggiare nel tempo: alla scoperta di castelli, fortezze, giardini, monasteri e strutture architettoniche dell'antica Roma in Germania*, Schnell+Steiner, Ratisbona, 2000.

3. Magazine and conference proceedings

Baglione C., Kusch C., *Intervista con Gisa Rothe e Peter Busch*, in «Casabella», n. 591, 1992.
Baglione C., Kusch C., *Intervista con Richard Röhrbein*, in «Casabella», n. 591, 1992.
Brandolini C., *Il futuro di Potsdam tra Berlino e Brandeburgo*, in «Casabella», n. 591, 1992.
Burelli A. R., *Architettura e amnesia,* in «Casabella», n. 591, 1992.
Burg A. (et al.), *Potsdam & Italien: die italienrezeption in der Potsdamer Baukultur*, Potsdam, 2011.
Cagnardi A., *Strategie di sviluppo della regione di Potsdam*, in «Casabella», n. 591, 1992.
Carboneri N., *Spazi e planimetrie nel palazzo palladiano*, in «Bollettino del Centro internazionale di studi d'architettura Andrea Palladio», n. 14, 1972.
Forssman E., *La concezione del palazzo palladiano*, in «Bollettino del Centro internazionale di studi d'architettura Andrea Palladio», n. 14, 1972.
Konter E., Bodenschatz H., *Städtebau und Herrschaft, Potsdam: von der Residenz zur Landeshauptstadt*, DOM Publ., Berlin, 2011.
Marzotto Caotorta F., *Il parco di Sanssouci*, in «Abitare», n. 352, 1996.
Malcovati S., *Schinkel a Berlino e Potsdam*, in «Domus», n. 809, 1998.
Mielke F., *L'architecture palladienne a Potsdam*, in «Bollettino del Centro internazionale di studi d'architettura Andrea Palladio», n. 10, 1968.
Mielke F., *Fredric II de Prusse et l'oeuvre de Palladio*, in «Bollettino del Centro internazionale di studi d'architettura Andrea Palladio», n. 10, 1968.
Schumacher H., *Pianificazione del paesaggio e progettazione urbanistica: Peter Joseph Lennè e l'area di Berlino-Potsdam*, in «Storia Urbana», n. 60, 1992.
Treccani G. P. (et. al.), *Danni bellici e ricostruzione dei centri storici: il caso della Germania*, «Storia Urbana», n. 129, 2010.

Nadia Charalambous
University of California, California, U.S.A.

Historical evolution of urban segregation: mechanisms of differentiation through space and time

1. Introduction: The existence of transient people in cities due to globalization has resulted in an intense flow of people and cultures leading to 'social and cultural diversity to most cities', challenging people's sense of identity and social relationships (Philips, 2007). European cities have been changing rapidly due to massive internal flows of labour (East and West) and migration from the South (mainly caused by conflict and environmental problems). Newly emerging settlement patterns in urban regions reveal concentration of demographic diversity. According to Philips, determinants of identity, such as religion, intersect with ethnicity and produce distinctive geographies and the creation of large ethnic clusters in cities (ibid.). This can be observed both in residential ethnic concentrations but also in patterns of encounter and ethnic clustering in public space.

Localized clusters have frequently been viewed as the main reason for the creation of a number of problems, often related to residential concentrations of lower income ethnic groups and mainly workers in the centers, and have frequently been associated with poverty areas and with lack of social integration. This observation is in line with Wirth's suggestion (1928), that there seems to be an "unmistakable regularity" in the process of formation of immigrant quarters and use of space. The location of immigrant quarters has traditionally been in the poorest areas of cities: in spatially and socially areas of transition (Vaughan 2005).

Nicosia, Cyprus, a city historically inhabited by a number of transient ethnic groups, is subject to a changing population dynamic precipitated by net in-migration. The phenomenon of residential ethnic concentrations in the city throughout its recent history is well documented through a number of sociological and spatial studies. A recent study has challenged the focus on segregation in the city as a purely residential phenomenon and shifted focus on "the public realm, the street [….], park, and other public spaces, which are more meaningful sites of ethnic segregation for people's everyday lives" (Phillips 2007, p. 1147).

The study focused on the complex relationship between the spatial and social dimensions of ethnic segregation in the public space of the walled city of Nicosia, and suggested that ethnic concentrations can also be observed in the use of public space. Research findings revealed that different ethnic groups and locals either maintain distinct artificially constructed spatial boundaries within overlapping areas or access distinct spaces through temporal negotiations. The interface between ethnic groups in the public realm of the city centre is found to be delineated according to social – rather than spatial – differences and the degree of place sharing also seems to shift across time. The lines of segregation are found to be different in different parts of the public space; in some cases they are distinct and persistent through time while in others they are blurred and continuously modified. Although yet not thoroughly explored, this observation highlighted the need to look at urban segregation through its temporal dimension, as a dynamic process 'where boundaries are continuously being raised, bridged and evaporated along different social lines' (Franzen, 2009).

The temporal dimension of urban segregation observed in movement patterns and the use of public space in the walled city of Nicosia, initiated the author's interest in a diachronic understanding of patterns and mechanisms of urban segregation. As Griffiths recently pointed out "movement takes place in an environment in which an historical series of initial conditions (socio-economic, topographical etc) has already constructed the field", introducing the notion of spatial configuration conceived as a dynamic open system (Griffiths 2011). Such an approach facilitates the recognition "of historical formations, their changes and re-articulations in subsequent transformations…." (Read 2011, p.123) and possibly relates the history of morphology to the history of events (Hanson 1989).

An historical/spatial perspective of urban segregation will provide, we believe, valuable evidence and facilitate understanding of the ways in which historical formations of urban configuration influence the present life of the city and contemporary patterns of segregation. This paper thus, sets out to explore whether spatial mechanisms of ethnic differentiation in the walled city of Nicosia may have roots in the past and may be better understood as being conditioned by the interaction between inherited spatial configuration and contemporary life.

2. The spatial form of ethnicity– historical background

Ottoman conquest: The city within the walls has a circular layout due to the building of the Venetian walls in 1567, a boundary which today separates the old part of the city to new developments, Fig. 1. The Ottoman conquest and subsequent rule of Cyprus until 1878, is of central importance in the evolution of Cypriot society, as it introduced a number of fundamental changes, which had respective ethnic and spatial consequences. The walled city was inhabited by two main ethnic groups – the Greek Cypriot majority and the Turkish Cypriot minority and grew around two "foci", which reflected the "dual administration" in Cyprus. Spatial arrangements during this period were found to be related with a number of social groups, differentiated according to ethnic, occupational and economic status (Charalambous 2001, 2007).
W.H. Dixon who visited Cyprus right after Ottoman rule, noted that the social changes brought about by the Ottomans had indeed had a visible spatial impact in Nicosia (Dixon 1879). The town grew around two "foci", which reflected the "dual administration" in Cyprus, noted earlier on. There was an overall division into four quarters, with different patterns of use or residence, Fig. 2:
-the north-west ("Konak") quarter, being the residence of the Moslem ruling class,

-the north-east ("Mosque") quarter, was the silent area of the residences of the Imams,

-the south-west ("Levantine") quarter, was the area of dancing women and money lenders

-the south-east (Cathedral) quarter, the residence of the Orthodox clergy.

We could more specifically relate spatial arrangements with a number of social groups, differentiated according to ethnic, occupational and economic status, found during this period in the island's capital, Nicosia, Fig. 3:

1. The Moslem high-income (the Governor and his assistants, people related to administration), situated at the north-west quarter, close to the "Serai"

2. The Christian high-income (the Archbishop, the Dragoman and their assistants, clergy and laymen), situated around the Archbishopric *(Archiepiskopi*), at the south-east quarter.

3. The merchants (Greek, Turks and Armenian), the majority of which were situated in the area of the Bazaar and to the south.

4. The Moslem clergy (the "Imams"), situated in the north-east quarter.

5. The Moslem lower income (police and military officers, workers, staff in khans and hamams etc),

6. The Christian lower income (craftsmen, workers, villagers working temporarily in Nicosia etc) in the east.

Broadly speaking, Moslems were concentrated in the northern part of Nicosia and Christians in the southern part. Initially the two areas were divided by the physical boundary of the river; later on Hermes Street (which occupied the old river bed, covered up for hygienic reasons by the British), the principal commercial street of Nicosia, took over as the peculiar axis of division and unity between the two main ethnic groups residing in the capital (Attalides 1981).

Empirical studies. The study of ethnic concentrations in the walled city has been the topic of a number of research projects utilizing space syntax as a method of analysis . Fig.4 e 5 presents an analysis of the axial organisation of the city of Nicosia during the Ottoman Rule (Pelekanos 1990).

The analysis of Ottoman Nicosia through its axial organisation, reveals important information regarding the location of the ethnic and social groups, not only along the major axial lines of the configuration but also in relation to the location of the public and residential buildings. The most integrated line of the system passes in front of the main market and in front of the Selimiye Mosque in a north-south direction. In other words, the most integrated spaces in Ottoman Nicosia are found around the central area and cover the market system. The "integrated core" of Nicosia covers mainly the public areas and does not penetrate into the residential areas. The majority of the public buildings associated with the main functions of the city are located in an area easily accessible by the visitors of the city.

A careful study of the social centres of each ethnic group reveals a spatial relation between them (Pelecanos 1990). The religious centre of the Greek Cypriot community, located in the south-east part, located in the north-west part, is globally segregated. Furthermore, the segregated areas cover most of the Greek Cypriot residential and religious quarters. It may be suggested that the public spaces of the Turkish Cypriot community which were then the ruling class, are on the whole located in areas which are more integrated, that is, more easily accessible to a visitor. Occupational status also seems to affect the organisation of public space in each community. Imams, the Turkish Cypriot priests, are locally segregated but globally integrated whereas the merchants have a strong spatial structure both locally and globally. The market and the merchants' houses are located in the most "integrated" part of the city.

Contemporary patterns of segregation: Independence, achieved in 1960, did not manage to eradicate underlying simmering tensions, and after the 1963 inter-communal conflict the Turkish Cypriots withdrew into enclaves as a first step towards partitioning of the island. Nicosia was now divided into two areas, not by a physical boundary (a river) as in Ottoman times, neither by a commercial street, as in British times, but by an arbitrary military line (initially drawn, by a British officer, on a map), dubbed the "Green Line" .

We could end our brief historical review by considering developments in Nicosia, focusing more specifically on the southern, Greek controlled part of the town. A point to note is that British administrators had early on in their rule placed their offices, as well as some residences, south and south-west of the walled city (presumably for health reasons, as this area was slightly higher up and away from malarial swamps, but possibly also in order to separate themselves out from the natives). By the 1930's some wealthy Greeks had followed the example of the British, moving southwards, out of the walled city. This process was accentuated after the post World War II economic growth and the increasing use of the walled city for commercial purposes, which meant that many residences in the inner city were converted into shops and commercial offices. Gradually this development expanded out of the walled city and a new commercial area grew, in a south and south - east direction. Effectively there are now two main commercial areas: the older one, within the walled city and the newer one, starting outwards from the walls.

These developments have brought new uses for the walled city. Firstly, because of the increasing congestion, most wealthy and middle class families have moved to new areas of Nicosia, leaving behind the poorer families and the elderly. Second, increasing numbers of immigrants and other foreign nationals are moving to the area, since rents of these mostly old flats and houses are much lower than elsewhere in Nicosia. Thirdly, some parts of the walled city have acquired a new importance as cultural centres or as "heritage" remnants . The present boundaries are the Venetian Walls on the one hand and the Green line on the other; the first boundary being associated with social class while the second being an imposed boundary associated with politicised ethnicity.

The historic centre accommodates today a diversity of ethnic groups that co-exist and share the public realm with the indigenous population. Fig. 6 presents an analysis of the axial organisation of the city of Nicosia today (Aknar 2009, Parpa 2010). An initial observation is that the city within the walls becomes on the whole segregated from the newly expanded city outside the walls. The areas around the most integrated axial lines however, are still the old market areas of the walled city and the newly developed market starting outwards from the walls.
Administrative and government buildings also move outside the walled city and are located on strong and integrated axial lines along the same direction. The public buildings of the Greek Cypriot community are now located on integrated and easily accessible areas as opposed to the period during the Ottoman conquest. Residential areas of the Greek Cypriots move to the periphery of the new town of Nicosia and are in general segregated and not as easily accessible from the rest of the town.

An important outcome of a recent study by Parpa (2010), are the results of the global integration analysis (modelling the potential movement flows at the all-city scale) of the walled city. Her analysis highlights the spatial dominance of Eleftheria Square and Ledra Street, both at a global and at a local level, which confirm that the most easily accessible areas are still the old market areas of the walled city, Fig 7.

Parpa (2010) suggests that the city within the walls 'presents a complex mosaic of different places, ethnically divided at a number of levels and forms". The spatial and social dimensions of the use of public space by ethnic groups also lied at the heart of a recent paper exploring the mechanisms involved in the ways Cypriots and ethnic minorities use the public space of the city centre and the interface (or lack of it) between them (Charalambous et al 2011). Different ethnic groups and locals either maintain distinct artificially constructed spatial boundaries within overlapping areas or access distinct, shared spaces through temporal negotiations.

The lines of segregation are found to be different in different parts of the public space; in some cases they are distinct and persistent through time while in others they are blurred and continuously modified. Time plays a particularly important role in the relationship between Eleftheria Square and the area around Rigenis Str., which lies adjacent to it) the former Levantine quarter during the Ottoman period). The latter has long been, and still is, the main red light district of Nicosia. The Levantine quarter described in the previous section, accommodated dancers and money lenders. While other areas have changed since the island's Independence, this area remained the same, in terms of land use and activities. The persistence of the same patterns of use and the same user profile through time, suggests there might be a spatial context which facilitates this particular use of space.

Residential quarters of the different groups inhabiting the city within the walls today are also located in areas with quite different spatial characteristics, Fig 8. Newly arrived immigrants are mostly located in the more integrated and easily accessible central and southwest areas of the city centre (3,4), while Cypriot families are mostly located in the less integrated and less accessible areas in the east and south-east parts of the city (1,2).

As Parpa also observed, it can be suggested that "the spatial mechanism that creates these divisions may have roots in the past and has gained a new contemporary form". Comparison of initial quarters divisions according to ethnicity, as we have seen in the previous section, to contemporary ethnicity distribution and neighbourhood maps suggests that immigrants` residence concentration lies in the most integrated zones, which were originally inhabited by Muslims. The Cypriot residential cluster in the southeast could be interpreted to be a community persistent in time, which is almost impermeable to visitors, tourists or immigrants. This might be the outcome of a desire to maintain its existence as a cohesive community.

3. Discussion. The above analysis confirms the importance of the political as an important parameter in the creation of space: apart from social, economic and of course spatial, space needs to also be treated as political. Design principles, social agency as well as political intentions need to be considered as part of the fundamental constitution of space . Furthermore, the social, as well as the economic and political are configurational not only in space but also in time. A general remark of research findings this far could then be that, irrespective of ethnic identity, the powerful, whether politically or economically, tend to be found in more globally integrated areas than the remaining weaker groups that make up the specific urban entity.

Research findings so far also illustrate that the use of public space is not so much conditioned by ethnicity but by the way individuals are positioned within their respective social groups as well as within society in general. It was thus observed that not yet consolidated (within their respective social groups) immigrants, together with already consolidated immigrants, as well as marginalised Cypriots were found to frequent the major and easily accessible public spaces of the city. What these groups had in common was clearly not ethnic identity but the desire or need to take advantage of the probabilistic way of socialization and co presence offered in such spaces .

The lines of segregation were found to be different in different parts of the public space; in some cases they are distinct and persistent through time while in others they are blurred and continuously modified. This observation confirms the need for a diachronic understanding of patterns and mechanisms of urban segregation. Urban segregation needs to be understood through its temporal dimension, as a dynamic process 'where boundaries are continuously being raised, bridged and evaporated along different social lines' (Franzen, 2009).

An historical/spatial perspective of urban segregation provides valuable evidence and facilitates understanding of the ways in which historical formations of urban configuration influence the present life of the city and contemporary patterns of segregation. The material and social conditions affecting the first occupants of the centre of Nicosia may well have conditioned the growth, shape and activity of the inner city from then to the present day. This paper suggests that spatial mechanisms of ethnic differentiation in the walled city of Nicosia, through the analytic lenses described above, may have roots in the past and may be better understood as being conditioned by the interaction between inherited spatial configuration and contemporary life .

Furthermore, through the analysis of the inner city we can see what appear to be two processes operating in parallel: one a local process, generating differences in local grid patterns and apparently reflecting differences in spatial culture in some way; and the other, a global process generating a single overriding structure which seems to reflect a more generic or universal process of some kind. The less integrated areas generated by the local process are largely residential; as Hillier suggests these can be thought of as the primary distributed loci of sociocultural identities; it could be through domestic space and its environs (including local religious and cultural buildings) that culture is most strongly reproduced through the spatiality of everyday life. Furthermore, it seems that it is the micro-economic activity of markets, exchange and trading that is most strongly associated with the 'integration core', religious and civic buildings being much more variably located (Loumi 1987, Karimi 1997, Hillier 2000). The integration core of public space also reflects the spatiality of everyday life, but in this case it tends both to the global, because of the nature of micro-economic activity to expand.

This explains the dual production of variants and invariants in the urban grid of Nicosia within the walls. On the one hand, a residential process driven by socio-cultural forces, influences local space organisation by specifying its geometry and generates a distinctive pattern of local differences, since culture is spatially specific. On the other, a public space process driven by micro- economic activity generates a globalising pattern of space, which tends to be everywhere similar because micro-economic activity is a spatial universal (Hillier 1996).

4. Bibliographic References

Aknar M., *Two faces of the walled city of Nicosia, Master thesis*, University College London, London, 2009.

Attalides M., *Social change and urbanization in Cyprus: A study of Nicosia*, Publications of the Social Research Centre, Nicosia, 1981.

Charalambous N. and Hadjichristos C., *Overcoming Divisions in Nicosia's Public Space in Perspectives on Urban Segregation, Built Environment* vol.37, n. 2: 170-183, Alexandrine Press, UK, 2011.

Charalambous N., *Tradition, Identity and Built Form, proceedings of the Rehabimed International Conference: Traditional Mediterranean Architecture*: Present and Future, 2007

Charalambous N. and Peristianis N., *Ethnic Groups, Space and Identity,* proceedings of the Space Syntax III International Symposium in Georgia, Atlanta, 2001.

De Certeau M., *The Practice of Everyday Life* (translated by Steven Rendall), University of California Press, Berkley and Los Angeles, California, 1984.

Dixon W.H., *British Cyprus*, 1879.

Evzona T., *The walled city: spatial configuration and social structures in the multicultural urban centre*, Diploma thesis, University of Cyprus, 2010.

Franzen M., *Matters of urban segregation*, Proceedings of the 7th international Space Syntax Symposium 105:1-105:2, 2009.

Furnivall (J.S.), *Colonial Policy and Practice*, Cambridge, Cambridge University Press, 1948

Griffiths S., *Temporality in Hillier and Hanson's Theory of Spatial Description: Some Implications Of Historical Research For Space Syntax*, Journal of Space Syntax, Volume 2, Issue 1, 73-96, 2011.

Hanson J., *Order and structure in urban space: a morphological history of the city of London*, Unpublished PhD. thesis, University of London, 1989a

Hanson J., Hillier B., The architecture of community: some new proposals on the social consequences of architectural and planning decisions, Architecture and Behaviour 3 (3): 251-273, 1987

Hillier B. and Hanson J., *The social logic of space*, Cambridge University Press, UK, 1984

Hillier B. and Vaughan L., *The city as one thing*, Progress in Planning 67 (3), p 205-230, 2007

Legeby A., *Accessibility and urban life aspects on social segregation, proceedings of the 7th International Space Syntax Symposium*, KTH, Stockholm, 2009

Noussia A. and Lyons M., *Inhabiting space of liminality: migrants in Omonia, Athens*, Journal of Ethnic and Migration Studies, V35(4), p601-624, 2009

Parpa S., *Ethnic divisions in public space*, Master thesis, University College London, London, 2010

Pelecanos M., Spatial forms of social solidarities: Nicosia 1878, Unpublished M.Sc. thesis, University College London, 1990

Phillips D., *Ethnic and Racial segregation: a critical perspective*, Geography Compass, 1 (5): 1138-1159, 2007

Read S., *History, Structure and Technique: A reply to Batty and another challenge to space syntax*, Journal of Space Syntax, Volume 2, Issue 1, 120-124, 2011

Vaughan L., Arbaci S., *The Challenges of Understanding Urban Segregation*. Built Environment, 37 (4), 2011

Vaughan L. (ed.), *The Spatial Syntax of Urban Segregation*, Oxford, Elsevier, 2007

Vaughan L., *Space syntax observation manual*, University College London, UK, 2001

Vaughan L., Clark D.C., Sahbaz O., *Space and exclusion: the relationship between physical segregation, economic marginalisation and poverty in the city*, proceedings of the 5th International Space Syntax Sumposium, Delft, Holland, 2005

Wirth L., *Urbanism As A Way of Life*, in:AJS 44, p. 1-24, 1938

Yacobi H., *Constructing a sense of place architecture and the Zionist discourse*, Ashgate, Aldershot, Hants and Burlington, VT, 2004

Captations

Fig. 1. The walled city – aerial photograph 1957. Source: Cyprus Press and Information Office (PIO)

Fig 2. The Social Division of Nicosia by Dixon

Fig 3.Location of socio economic groups

Fig 4. Axial organization. Source: M. Pelekanos

Fig.5 Location of market places. A. the bazaar, B. the market along the river, C. the long market

Fig.6 Nicosia today-axial organization (global integration). Source: S.Parpa

Fig.7 The south part of the walled city – axial map. Dark lines indicate high integration with the rest of the city

Fig 8. Residential concentrations – Global integration

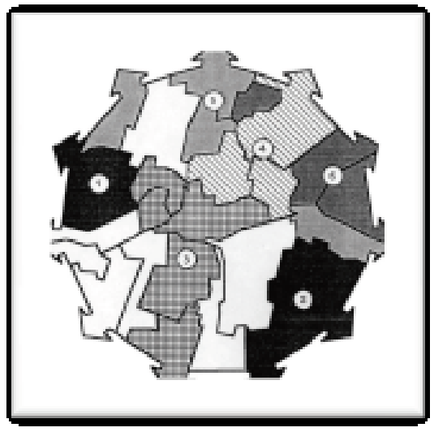
Notes

[1] Charalambous and Hadjichristos 2011.
[2] Space syntax is a set of theories and non-discursive techniques which aim to use rigorous comparative analysis to analyse the configurational aspects of space and form in settlements, cities and buildings, through which culture is transmitted (Hillier and Hanson, 1984). Space syntax (or 'syntactic') analysis has shown that seen as systems of organized space, cities seem to have deep structures or genotypes, which vary with culture (Hillier and Hanson, 1984, pp. 123 et seq.). Spatial properties which define cities as cultural types seem to be associated with the social systems of their corresponding societies. It has been proposed that space is the medium that both generates life in cities and conserves cultures by controlling encounter and copresence (Hillier, 1996). Syntactical analysis is commonly based on the axial map, the set of fewest and longest lines of sight passing through every public space in a city's street network. The map shows the relation of each line to the network of the whole city ('global' relations) or the relation of each line to the immediate surroundings ('local' relations). The main measures are 'integration', which quantifies relative depth from any space to all other spaces. Maps are coloured in a scale from red to blue, or black to white in an grayscale map, to indicate the high-to-low range of values.
[3] The most "integrated" lines of the system are shown in bold and represent the most easily accessible areas to a visitor. The lines presented in light grey colour represent the most "segregated" areas of the city, that is, areas which are not easily accessible to a visitor moving through the city.
[4] The integration core of a city includes the most integrated or most easily accessible areas at a local level.
[5] It would not be difficult to discern a mutually reinforcing process in the formation of the social and territorial boundaries on the island. The gradual hardening of the social boundaries between the two major ethnic communities led to the gradual build up of the territorial boundary. The entrenchment of the territorial boundary has, in turn, contributed to the further hardening of the social boundary between the communities (Peristianis, 2000).
[6] Attalides 1981
[7] In most cases this latter use involved restoration work by the Nicosia municipality or the state – and this has brought about a fourth trend, relating to commercial restoration of old houses, restaurants, pubs, galleries, and so on, aiming to exploit the higher values bestowed on the return of culture and tradition in the area.
[8] An interesting observation by Attalides suggests that ethnic composition is indeed one of the determinants of urban structure. Furthermore, he suggests that political conflict and not just demographic composition resulted in a policy by Turkish Cypriot leaders in favour of separate economic, political and residential development.(Attalides, 1981)
[9] This observation was linked to De Certeau's distinction between those who have the power to produce space through strategies and those who, unable to produce space, take advantage of opportunities offered in time to 'make do'
[10] Yiftachel (in Watson et al 1995 p218) argues that a multiethnic society can be either pluralistic or deeply divided. The first model is composed by immigrant groups that tend to assimilate over time, and ethnic matters are interwoven with class issues differentiations as well. The second model is composed by non-assimilating ethnic groups, often characterised by long history of struggles over land and control.

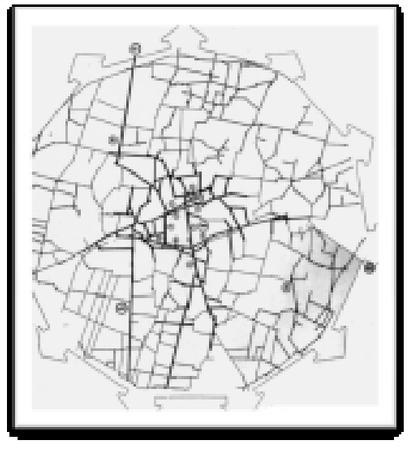
Nadia Charalambous
University of California, California, U.S.A.

1

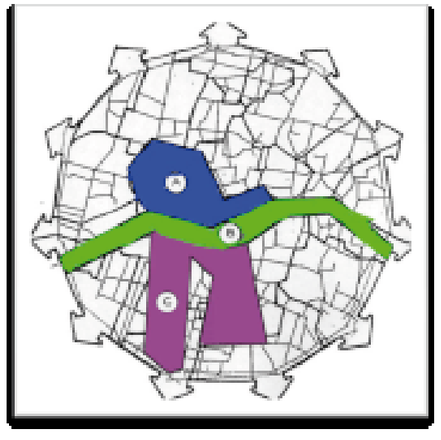
2



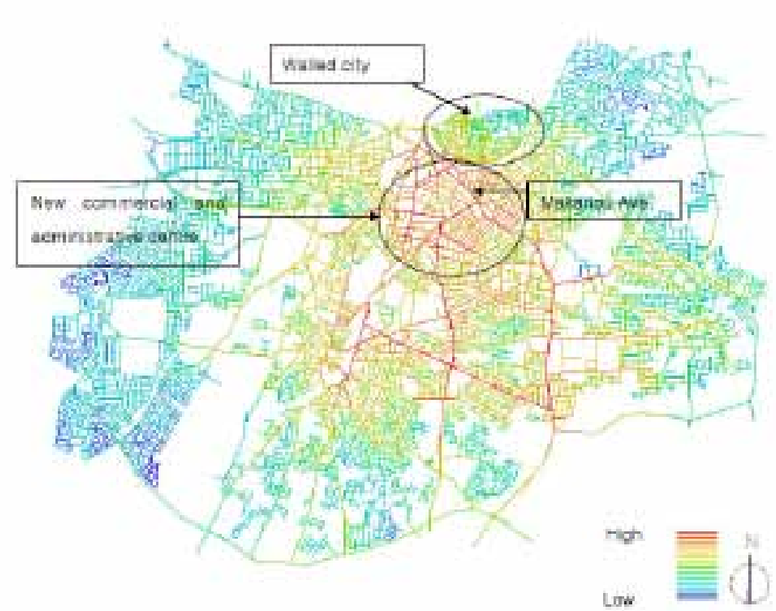
3



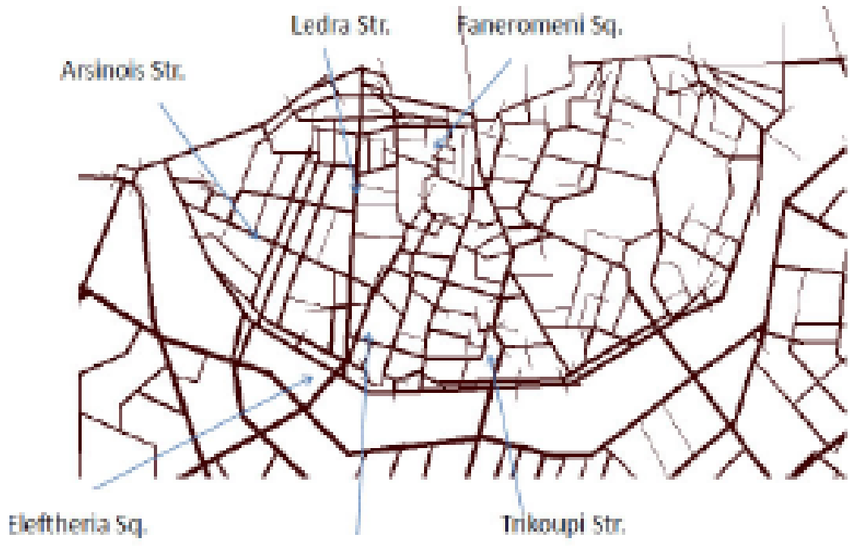
4



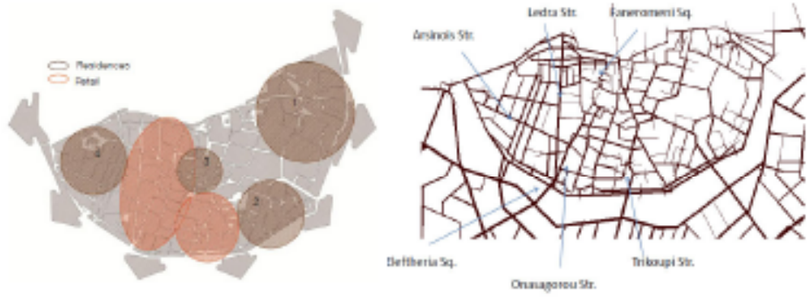
5



6



7



8

Antonia Maria Alda Chiesa
Politecnico di Milano, Italy

Evolution of urban landscapes

"For a city is a dramatic event in the environment" (Cullen 1961:7)

Thesis:

The evolution of contemporary city may be illustrated in relation to its territory: its environmental impact may be investigated within urban landscapes through an ecological approach.

1.territorial city

Since the accelerated growth of contemporary city has overwhelmed its boundaries with the spreading and rarefaction of the compact urban body in the open space (Ingersoll, 2006), frontiers of new paradigmatic implications have been revealed (Shane, 2005). The concept of territorial city embodies the redundancy of urban surroundings including larger suburban areas. Such enlarged spatial configuration affects social behaviors, generating sets of new lifestyle practice, and seems to improve, or even guarantees, its economic opportunities and appeal. As for the virtuous condition of the Valley Section (Geddes, 1915), any settlement is strictly bounded with its territory in terms of infrastructural, economic, social and cultural interrelation. According to such awareness, and together with a re-evaluation of the pre-modern analysis by Carlo Cattaneo (1801-1869) the indivisible couple city-territory embodies an extended entity sharing geographical and cultural identity: the city indeed coincides with its territory. According to a Mediterranean visual and structural approach, as shown in the beautiful fresco of the Effetti del Buon Governo in campagna , suburban and rural sets are traditionally included in the encompassed city as a holistic and totalizing system: the city indeed has been defined as the place from which to observe the surrounding territory (D'Alfonso, 1998) and the territory is vital to the city.

In this sense a comprehensive re-interpretation of landscape as the Total Human Environment (Naveh et al., 1990) may merge man and non-anthropic elements, the built and the un-built, in one single whole of coexistence. The identification of landscape as the appropriate context for the analysis of urban phenomena adds complexity to the understanding of a city, but describes realistically the wider dimensions of the multi-scale, multi-tasking and synchronic dimensions of contemporary lifestyle. The development of such spatial flexibility in the experience of a territory, due to advanced technological progresses, takes place in the space of connections (Choay, 2004): information and infrastructural devices affect significantly the couple space-time multiplying the dimensions of the perceived landscape.

Moreover, the concept of territorial city may be applied at different urban-range sizes, from the medium-size city, as shown in the 2006-2010 research by DrPau PhD students , and in the M&S Lab research on Dar es Salaam , to the wider dimensions of convulsive growth of the megalopolis. In particular the African context of fast developing cities requests a study on the evolution dynamics of the entire territorial city: including open landscapes or rural fields may help, for example, in the definition of facts causing the flexible logics within the informal settlements.

One of the challenges set by the concept of territorial city is the definition of urban boundaries which seem to be affected by a blurring liminality: the transition from the built to the un-built, far from being recognizable within clear limits, may be described by a gradient of rarefaction of the compact body. From the highest to the lowest degree of urbanization, distinct landscapes may be therefore described in terms of variable nuances of density, grain and complexity according to a selected urban section. In this sense the idea of ecofield (Farina, 2000), linking any spatial configuration with a cognitive map according to different functions (Farina, 2006:32-34), may properly illustrate floating city boundaries through distinct fields of examination according to sets of declared variables which may be found as formal and structural specificity. Any temporal and spatial-mappable unit of distinct ecological and topological nature (Naveh et al., 1990) may be described as landscape unit in its richness in volume and specific composition.

2.urban ecosystem

The concept of territorial city embodies therefore a degree of sophistication, which has been called organized complexity (Jacobs, 1961) (Lynch, 1981): various elements interfere according to sets of codified rules. If intended ecologically (Vercelloni, 1992:12-13), such interaction resembles to a process more than to a static system, no matter the exchanging amount of tangible and intangible variables implied.

The idea of urban ecosystem of human groups (Lynch, 1981) illustrates a constant state of transformation as the common character of any human settlement on a distinct topography: the good city, states Lynch, is a constantly changing environment that guarantees a positive ecological balance as a commitment for each inhabitant; the interaction among parts defines time to time the equilibrium of the whole ecosystem.

In this sense, the tridimensional declination of the word environment (Turri, 1974:37-42) specifies the structure of the spatial entity which embodies the set for urban drama: the superimposition and juxtaposition of climate specifics, orographic peculiarities, natural and anthropic landmarks, cultural diachronic values on a distinct topography shape the environment as a layered structure. Landscape may represent the palimpsest (Marot, 2003) through which an environment is perceived as the element highly influencing, by different speed, dimension and tone, the spatial trajectories of urban actors.

The emergence of the ground over the figure in the territorial city, recalling the Giacometti's sculptures, addresses therefore the field of action (Corner, 2006) to an idea of performative urbanism (Shane, 2003:4) : social and economic new habits of multi-scale programs imply an extreme various land-use. Landscape therefore hosts the space of the commons (Hardin, 1968), as shown by some West8 design (Toronto 2009) experiments mixing variously the informal dynamics over the formal and providing visitors with various site-experiences within the urban scene .
Still the fascination for the territorial city has to deal with its dramatic impact on the quality of the environment may be expressed in Shane's words: "As a paradox, the city is both the main threat for ecology and the best hope to survive for a great amount of people".

In the post-Eden troubled relation of Man and Nature the once symbiotic relationship between humans and their habitats (McHarg, 1969) is today undermined by accelerating and even degenerating processes affecting and developing urban patterns (Wall et al., 2010:20). Delicate environmental adjustments and severe morphological transformations of inhabiting spaces may be observed overall in the city, mostly in the landscape, thanks to the stronger presence of the natural and rural element and to the wider dimension of sites of new urban development as infrastructural areas, industrial compound, landfill and ground-exploitation sites. Phases of adaptation, in consideration of the unpredictability of ecological response, may be therefore considered in cases of urban design projects, as for the case of the Landscape Urbanism's Fresh Kills Park project by Field Operations (2001).

Working on sites of unbalanced ecological conditions seems to be one of the challenges of urban design and landscape urbanism. Various dynamics of city transformation, due to a technological obsolescence and abandonment (Lynch et al., 1990) , as for the wrecked infrastructure of the former Highline in New York, or due to the decline of exhausted economies, as for the Ruhr Gebiet case, produce drosscapes (Berger, 2006:236). Together with wastelands", "delaissé" and "friche" (Clemént 2004), drosscapes are hybrid and unstable landscapes of high morphological and typological potential showing a state of ecotonal tension, in-between instability and transition.
Such collisive sites (Lyster, 2006) , hosting a collision between interacting elements, may be accurately mapped in order to demonstrate the ecological behaviour of a territory. Insisting on restricted areas like hubs and intermodal nodes, or on hybrid areas of urban agriculture or even on much wider in-between zones connecting urban expansion and natural areas, collisive sites highlight the vulnerability of a space, playing as strong magnets managing tensions and influencing processes of exchange and interaction.

Economic, informational and technological trends create situations of disequilibrium and instable balances among the hard and soft, the formal and the informal, the tamed and the wild within a urban rich ecosystem.

3. metabolic strategies

The 2009 research by DrPau PhD students in San Fernando-Cadiz focused on the thorny issue of the urban-natural collision: the saltponds and natural reserve of the Parque Natural de la Bahia di Cadiz is the soft and sensible element suffering from urban hard pressure of the Cadiz territorial city, including small settlements which share the same economical and social context. The hole system, risking an ecological collapse, the lost of ecosystem diversity and a consequent lowering of life quality, needs strategies of new ecosystemic balances. The design of flexible ecotones of urban liminality, of new sets of visual and cultural relations as re-discovered in the local and regional context was inspired by a improvement of resilience capacity based on site potentials.

The concept of resilience works indeed with the cumulative effect included in any growing process as specific versatile robustness (Simmonds, 2009) developed by the system in its evolution through subsequent changes. Original design experimentations proceed therefore through the management of disturbance elements, which may multiply system's surviving capacity (McGrath et al., 2005:10).

Besides, the topographic interpretation of urban metabolism (D'Alfonso et al., 2007), concerning the work of urban system exchange in its morphological effects on the territorial, represents a design tool for the analysis and the management of the regenerating processes of the city. Design operation of maintenance, transformation and substitution within the existing urban pattern, with regards for the energetic consumption, architecture life-cycle and affordable cost issues, are appropriate means of evolution management –as shown in the above mentioned Bari's research-, since they tune with contemporary urban dynamic. The metabolic-topographic action selecting design operations according to their speed and effectiveness in the virtuous transformation of the city, may operate in context of environmental collision establishing sets of territorial requirements. Flexible operational and working methods sensible to the progresses of new parametric and informational technologies (Corner, 2006) may properly adapt design to the multi-scale nature of contemporary urban landscape, working on maps and powerful representations of actual and desired landscapes.

4.image as a strategy

One of the criteria for the editing of interpretative maps is related to the concept of environmental image (Lynch, 1960): any specific urban landscape may be described in terms of identity, with distinction from other elements, of structure, as referred to a peculiarity in spatial pattern and as a matter of comparison with similar cases, and finally in terms of meaning, as sign of site-experience, local cultural sedimentation or related to the emotional sphere of land use. By identity, structure and meaning the environmental image represents synthetically a representation of the territorial city even in the case of the specific architecture of a mental map. A landscape of constant evolution needs new maps based on environmental images, which may give the most appropriate representation and interpretation of a site in order to foresee future transformations. As a consequence, beneficial effects in terms of territorial awareness and cultural identity may contribute to regenerate urban context according to the heideggerian couple caring-cultivating (sensu Petrosino 2008) . Mapping, as working by images, means in fact the re-discovering of the landscape by structures of hierarchical relations, revealing its strengths and sensibility, site potential and vulnerability. Indeed, as Lynch states, "Environmental images are the result of a two-way process between the observer and his environment. The environment suggests distinctions and relations, and the observer – with great adaptability in the light of its own purposes – selects, organizes, and endows with meaning what he sees" (Lynch, 1960:6).

The need for imageability (Lynch, 1960) of a place may be intended as a synthetic interpretational concept of analysis, and even more as a design aim, in the transformation of the contemporary city. The poetic structure of the fields in the country, as seen from the encompassed middle-age town, was based on visual and cultural relations of landmarks clearly emerging from the dense ground so that the whole territory could have been remembered vividly in its architectural expression.

The need for a speculation in the world of the imagination, defined as imaginary, is indeed, as underlined by Landscape Urbanism theory, a deep requirement for environmental design: "It seems landscape urbanism is first and last an imaginative project, a speculative thickening of the world of possibilities" (Corner, 2006:32). As for the Eastern Scheldt Storm Surge Barrier project designed by Adriaan Geuze/West 8 (1990) unusual chromatic and geometrical effects, based on different materials, strongly influence both visual relations of the high-speed infrastructure and tactile scale of the local experience and fascinate perception by rhythm and geometry.

3.conclusion

The importance of the territory in the analysis of city transformation in strictly connected as the concept of landscape in terms of scale, environmental sensibility and design approach.

New maps of urban regeneration may be edited in consideration of the constant evolution of semantic and formal relations among natural elements and human actors. Working with territorial vulnerability in order to improve site resilience may provide the city with a deep knowledge of landscape opportunities and a useful contribution to a respectful evolution of the urban ecosystem based on contextual sensibility, especially in suburban transitions and urban fabric processes of obsolescence-reuse.

Antonia Maria Alda Chiesa
Politecnico di Milano, Italy

Bibliography

D'Alfonso E., *Architettura e paesaggi*, in «Arc» n.3, 1998

Berger A., *Drosscapes, Wasting Land in Urban America*, Princeton Architectural Press, New York, 2006

Cattaneo C., *La citta considerata come principio ideale delle istorie italiane* in Crepuscolo n. 42, 17.10.1858. Belloni G.A., (re-editor) Vallecchi stampa, Firenze, 1931

Chiesa A., *Ecology for Architecture*, Libraccio, Milano, 2011

Chiesa A., *Misura e scala della città contemporanea. Il caso barese. Landscape Urbanism e morfologia urbana: il disegno urbano italiano verso il disegno urbano anglosassone. (Measure and scale of the contemporary city. The bari case study. Landscape Urbanism and urban morphology: Italian and English Urban Design)*, (PhD Dissertation) Supervisor: Contin A., Politecnico di Milano, Milano 2010

Chiesa A., Frigerio A., *Dar Smart. Sustainability Of Identity. Dissertation within the International Seminar Dare Terra, Nuovi modelli sostenibili per la crescita urbana, Abitare la terra (Providing earth, New sustainable examples of urban development, inhabiting the earth)*. Urban Center, Milano June, 23-24, 2011

Choay F., *Espacements. Figure di spazi urbani nel tempo*, Skirà, Milano, 2004

Contin A., *Il partito dell'immagine*, C.U.S.L., Milano, 2003

Contin A., *Bari, studi per la metropoli*, Alinea, Firenze, 2005

Cullen G., *The concise townscape*, The Architectural Press, London, 1961

Farina A., *Principles and methods in landscape ecology: toward a science of landscape*, Springer, Dordrecht, The Nederlands, 2006

Ingersoll R., Sprawltown: *Looking For The City On Its Edges*, Princeton Architectural Press, New York, 2006
Jacobs, Jane. *The Death and Life of Great American Cities*, Random House and Vintage Books, New York, 1961

Lynch, Kevin, *Good City Form*, MIT Press, Cambridge MA and London,1981

Lynch K., Southworth M., *Wasting Away - An exploration of waste: what it is, how it happens, why we fear it, how to do it well*, Sierra Club Books, San Francisco, 1990

Marot S., *Sub-urbanism and the art of memory*, Architectural Association Publications, , London, 2003

McGrath B., Shane G., *Sensing the 21st-Century City: Close-up and Remote*, Wiley- Academy, London, 2005

Naveh Z., Lieberman A.S., *Landscape Ecology. Theory and Application*, Student Editing Sprinter-Verlag, New York, 1990

Podda R., *Implementare la sezione per una metodologia di progetto del Polo multiscala. Casi a confronto Bari come paradigma* (PhD Dissertation), Supervisor: D'Alfonso E., Politecnico di Milano, Milano 2009

Shane D. G., *Recombinant Urbanism: Conceptual Modeling in Architecture, Urban Design and City Theory*. Wiley, London, 2005

Turri E., *Antropologia del paesaggio*, Comunità, Milano, 1974

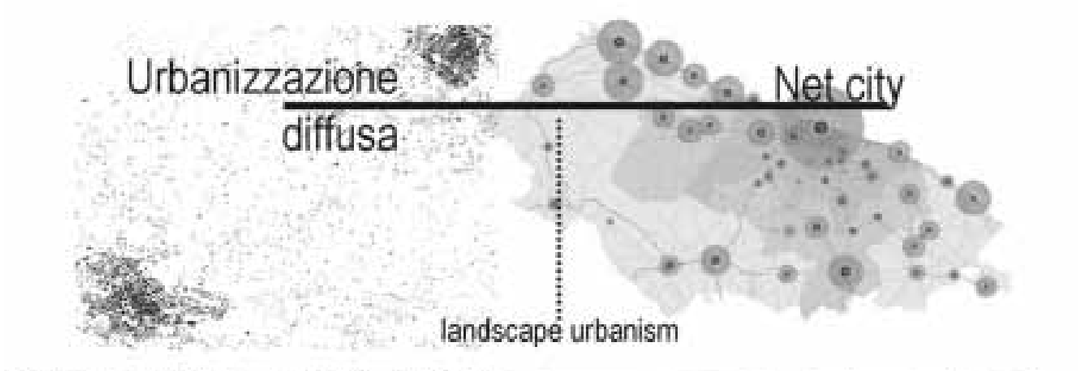
Vercelloni V., *Ecologia degli insediamenti umani*, Jaka Book, Milano, 1992

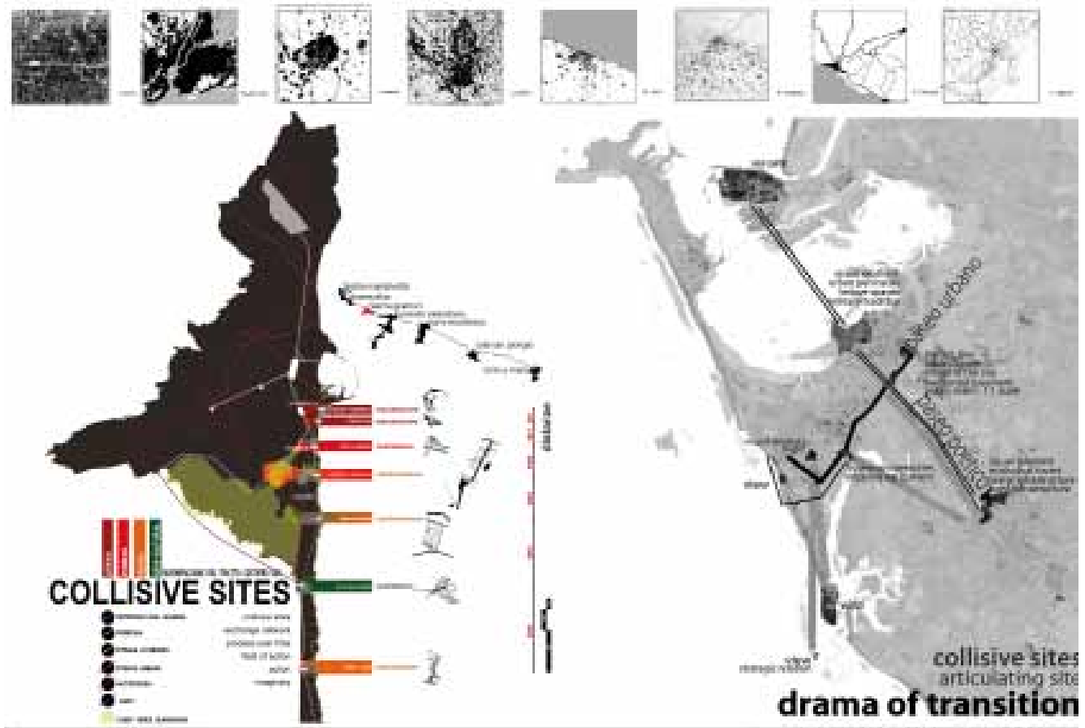
Waldheim C., *The landscape urbanism reader*, Princeton Architectural Press, New York, 2006

Wall E., Waterman T., *Basics Landscape Architecture: Urban Design*, AVA Publishing SA, Lausanne, 2010

Notes

[1] Ambrogio Lorenzetti, *Effetti del Buon Governo in campagna*, 1337-1340, Fresco, 14 m, Sala della Pace, Palazzo Pubblico, Siena
[2] Chiesa A., *Misura e scala della città contemporanea. Il caso barese. Landscape Urbanism e morfologia urbana: il disegno urbano italiano verso il disegno urbano anglosassone. (Measure and scale of the contemporary city. The bari case study. Landscape Urbanism and urban morphology: Italian and English Urban Design)*, PhD Dissertation, Supervisor: Contin A., Politecnico di Milano, Milano 2010
Contin A., *Bari, studi per la metropoli*, Alinea, Firenze, 2005
[3] Podda R., *Implementare la sezione per una metodologia di progetto del Polo multiscala. Casi a confronto Bari come paradigma*, PhD Dissertation, Supervisor: D'Alfonso E., Politecnico di Milano, Milano 2009
[4] Chiesa A., Frigerio A., *Dar Smart. Sustainability Of Identity*. Dissertation within the International Seminar Dare Terra, *Nuovi modelli sostenibili per la crescita urbana, Abitare la terra (Providing earth, New sustainable examples of urban development, inhabiting the earth)*. Urban Center, Milano June, 23-24, 2011. See also the Dar Smart project presented within the 2011 Ambrosetti-Banco di Sicilia's Competition of Ideas *Quartiere urbano sperimentale per l'Africa (An experimental urban neighborhood for Africa)*.
[5] James Corner, in fact, indicates process over time as one of the most important factor which may be considered in Landscape Urbanism (Corner 2006)
[6] D. G. Shane frame such distinguish aspect in the analysis of the emergence of Landscape Urbanism: "Corner's project in the Landscape Urbanism exhibition illustrates his concept of a "performative" urbanism based on preparing the setting for programmed and unprogrammed activities on land owned in common". (Shane D. G., *The emergence of Landscape Urbanism*, in «Harvard Design Magazine» n.19 Fall 2003/Winter 2004)
[7] the work of West8 in Toronto or Amsterdam may be described as one of the most significant on the topic
[8] Decline, decay and wasting are a necessary part of life and growth; we must learn to value them and to do them well. (Lynch K., Southworth M., *Wasting Away - An exploration of waste: what it is, how it happens, why we fear it, how to do it well*, Sierra Club Books, San Francisco, 1990)
[9] "The term drosscape implies that dross, or waste, is scaped, or resurfaced, and reprogrammed by human intentions. Moreover the ideas of dross and scape have individual attributes". (Berger A., Drosscapes, *Wasting Land in Urban America*, Princeton Architectural Press, New York 2006)
[10] Lyster, Clare. Landscapes of exchange: re-articulating site, in Waldheim C., *The landscape urbanism reader*, Princeton Architectural Press, New York, 2006
[11] D'Alfonso E., Contin A., *The rehabilitation of urban edges and the sustainability of the identity*, International Workshop, Cadiz, Spagna, Sept3-10, 2009
[12] "Tilling" or "cultivating" expresses the more explicitly active/projective trait (...) of human action: man does not undergo life, but intervenes in it, transforms it, takes the initiative with regard to it by modifying it in accordance with those signs/dreams that constitute the very fabric of his sensibility and his intelligence (Petrosino S., *Costruire e custodire: l'irriducibile sfida dell'abitare -Building and caring: the implacable challenge of dwelling*. In «Lotus international»136, 2008)
[13] As Oswalt states "Culture emerges from the transformation of nature, and it is thus not a coincidence that one speaks of cultivating (kultivieren) farmland. The German word Kultur (culture) derives from the Latin word cultura, which refers to agriculture as well as the care of the body and mind". (Oswalt P., *Designing Nature*, 1998)





Isotta Cortesi
Università di Siracusa, Italy

Delirious Tirana

Prologue

In Albania, political and economical changes generated a growth process which pursues modernity at all costs producing dramatic consequences on urban structures. Specifically in the last fifteen years, the capital, Tirana, faced deep revolutionary changes which brought serious consequences to the environment and to the historical urban structure. Changes occurred in Albania since 1991. It was the end of the dictatorship which started in 1946. The country has undergone fast transformations. Changes affect cultural and social traditions. Progress in the economy brought, as consequence, the exploitation of landscapes, the mass construction of residences along the coastline, the decay of the management of the land as well as the abandonment of monuments, museums and important archaeological sites. Albania faced transformations in a compressed time of 20 years, which moved the country from a pre-modern medieval condition to a post atomic condition of only apparent democracy.
In this time people have lost the sense of civic respect for collective ideals, for public space and for common rules. Most of the action is left to individual initiative. It is difficult to establish a shared consensus on larger problems as illegal housing development, environmental pollution, oblivion and destruction of monuments and heritage sites.

This paper focuses on the consequences produced by the rapid cultural an economical growth occurred in Albania since freedom (1991) specifically occurred in the development of the capital, Tirana.

Tyranny effects

Enver Hoxha's dictatorship (1946-1991) has blurred folk traditions as well as social and religious habits, has limited individual thoughts and actions, has convicted the population to a collective project in the name of national progress. Everybody had to contribute to the economy; everybody had to work hard in fields, factories or elsewhere. Everyone was under the vigil control of the party's eyes and ears; everybody was in threat of imprisonment, deportment and humiliation. It was a condition of terror where citizens were in danger. Most of the population in the country lived in misery and threat for nearly fifty years. Freedom brought hope and faith in progress without weigh up the costs of changes. Changes were necessary above all, probably at any price. Consequences, visible today in many aspects of the Albanian culture, are the loss of bonds with history and traditions, the exploitation of landscape and environment and the restless growth of Tirana's urban form.

The blurred knowledge of heritage

The heritage destruction perpetuated in Albania during these past twenty years might find possible reasons:
- The eradication of past culture (pre 1946) perpetuated by Hoxha's dictatorship, had as a direct consequence, a distance from the country history. The dictatorship erased critical means of interpreting the past, it actually rewrote history: eliminating intellectuals, religious charismatic figures as well as political opponents and their families. As a consequence tangible heritage is not comprehensible to most of the people. Citizens today do not have the cultural means to foster it.
- Individual needs prevail over the collective ones, today. This is a result of the massive regime's propaganda on collectiveness. Nowadays civic responsibility in the population is very low. Until 1991 each individual was part of a larger group, his/her aspirations, thoughts and goals were constrained under a strict control, as the famous motto reveals "Let the party think for you".
- One third of the population has fled the country, emigrated abroad searching for a better life. The tangible heritage has been abandoned.
- Economical resources are limited, urgent matters are roads, energy developments and waste treatment plants. Citizens do not have the finances to invest in preservation and culture.
- Traditional buildings do not respond to modern standards of life.

Tirana's Past

Tirana is a fairly recent city, less than 100 hundreds years old; originally when the Austrian, in 1916, developed the first urban plan it was a large ottoman village in a strategic flat land. Becoming the capital of the new nation in 1920 Tirana had the first regulatory plan designed by Austrians in 1923 which was seeking a compromise between the regular orthogonal street pattern and the existing meandering structure with the old bazaar in the centre, this plan led to the opening of important roads. It was indeed the Armando Brasini project (1925) which influenced most strongly the next urban changes, with a group of six buildings for the ministries and the central boulevard directing to the royal palace. None of his projects were built. A second regulatory plan, in 1926, materialized the Brasini's idea for the north-south boulevard crossing the river Lana. It was with the architect Wolfgang Köhler plan (1928) that the radial street structure, the quadratic block system and the concentric circulation began to define the actual city form. It is in the 1929 urban plan that we can trace the enhancement of the grand boulevard which begins further north by the train station. At this point it was 2 km long and 35 meters wide: it became the main founding mark of the new capital. The first buildings to be erected along the axis are the national bank by architect Vittorio Morpurgo with artists Alfredo Biagini and Giulio Rosso, the Ministries designed by Florestano Di Fausto in eclectic Renaissance Italian style. During the Italian occupation (1939-1943) different urban plans were developed, the last one dates 1942 where the radial, concentric urban structure superimposed to the quadratic minor block layout is definitely confirmed. The last projects which were built along the "via dell'Impero" were designed by Gherardo Bosio as the Hotel Dajti, the Gioventù Littorio Albanese, the Casa degli Ufficiali, the Quartier Militare, the Dopolavoro, the Sport Center with the Olympic Stadium and the final arrival point on axis: the Casa del Fascio.

Tirana and Enver Hoxha

The 1957 plan consisted in the renewal of the existing central zones and the development of new peripheral areas to provide residences for local industries' labour forces. Centralized town planning operations were the main activities for architects during the dictatorship. The main goal was to eliminate private estates and this, as a consequence, often annihilated entire blocks of traditional buildings. The tendency was to refute urban planning from the past, (monarchy and fascism) although the north-south boulevard was of great importance for power celebration, for the regime propaganda and as a place for parades. So during Hoxha's despotism the axis, with its centre in Skanderberg, square was recognized as a very relevant episode in the urban structure and the government decided to enhance its public aptitude with a radical urban intervention. In fact with the goal to eliminate private property together with the "modernization idea" the dictator, in 1960, decided to eliminate the city's core, the bazaar. The new centre representing the "force and rebirth" of Albania had to be monumental and the old ottoman bazaar, with low rise adobe or stone buildings with terracotta tiled roofs was not representative of the regime grandeur. So the old bazaar, the City Hall, the orthodox cathedral, and old traditional houses were demolished to make space for buildings of national interest such as the National History Museum, the Palace of Culture and the Hotel Tirana, the first and only tall building in town and, after his death, Hoxha's pyramidal mausoleum. This was a radical and very destructive intervention with relevant effects which still are evident today in the problematical condition of this part of town.

The Single Family House Tradition

The country is rich in different traditions of construction according to the region and to materials availability. Traditional buildings do not respond to modern standards for the lack of facilities and services. More often citizens associate it with the misery they suffered, so they believe it is easier to demolish rather than to restore. Generally old houses used to be one or two floors: a simple rectangular shape with a four sided roof.

The Hoxha's regime structured a bureaucratic apparatus of people in order to survey, measure, document, map and draw all the relevant buildings, from stone rural houses to rich ottoman residences in cities, to churches and mosques. Declaring them national monuments and often transforming them in museums or state property. Now, not only these building are neglected and of little interests to young scholars but often they were demolished to build a "modern" house. There is no control on the built heritage which can disappear in the indifference of administrators. Today in Albania action prevails instead of knowledge.
The urban cultural heritage of the capital centre is in danger. The traditional shtepia tiranëse (the family house from Tirana), with its symmetry, the wide hallway, the walled garden has been put aside for decades as it expressed the privileged condition of some families and is now of no interest because it is not representative of the "new".

The framework-beams-columns building technique made of reenforced concrete has replaced traditional wall building, allowing a panoply of freedom of expression which nobody has refused. The result is astonishing in the multitude of answers, naivety, and fantasy but at the same time is alarming as it illustrates how quickly ancient knowledge has disappeared. New homes have to be visible, unique, expression of a life time dream. After years of collective residences the dream of the average Albanian is a single family house, as high as necessary and walled in as much as possible.

Today, the tradition to construct following traditional methods and natural materials is gradually being lost. The choice of site, the notion of climate, the decisions that precede construction, the choice of appropriate materials to produce "good" forms, are all part of an heritage which is disappearing in the rush towards modernity. Today we are witnessing a tabula rasa of history, rituality, techniques, and living style which describes a culture and a heritage in chaos.

The Urban Development and Edi Rama's "Urban" Power

Since 1991 the population experienced freedom of movement, expression and behaviour. Suddenly all the constrictions which were ruling the country were cancelled. This meant that most of the internal population, secluded for centuries in the mountains, descended to live in the main cities with a rapid increase of residents in search for better life conditions. Tirana and Durres witnessed a rapid growth of residents. Immigration from the countryside produced chaotic urban conditions. Plots of land were sold. Houses of any kind were built without permissions.

Old houses were demolished. Public spaces were occupied. Archaeological sites were transformed. The growth of the city, eroding the countryside, was left to individual fantasy and initiative. The logic of maximum profit prevailed on common goods.
Today's residential areas in the periphery of Tirana are not the results of any urban planning; they are the occasional expression of individual actions and investments. These areas are deprived of roads, sewage, pedestrian sidewalks, parking and minimal condition for an healthy living environment.

Developments still grows without planning on the outskirts of Tirana or on the dirty shores of Durres. There is no respect for property distance law and is quite common to see the rise of a twenty stories building attached to a traditional one floor house. Until now the two big cities did not have any effective urban regulating plan. Numerous urban plans were developed for Tirana, but none of them was adopted: a delirious condition which legitimates the absence of rules and law reverence. Planning concepts extend out into the regional metropolitan scale of the "Greater Tirana", including the territories toward Kruja, Vore and Durres.
Edi Rama activity as Tirana's major was characterized by two distinctive periods. At first his efforts were directed toward the improvement of the urban living condition and the re-conquest of public space. The quality of dwellings designed during Hoxha's era was very poor in terms of constructive methods as well as aesthetics which was worsened by individual transformations of facades, roofs or balconies after 1991. He promoted a general aesthetic face-lift with different artists painting the dull communists facades with colours, geometrical patterns and decorative motives. This political statement, of course, had a great impact on the physical aspect of the city bringing colour and art as a public rebirth gesture into the urban regeneration discussion. Furthermore he decided to re-conquer the public space that was illegally occupied with different activities as bars, kiosks and restaurants which, literally, were built overnight in public parks, on sidewalks and over the Lana river banks. So the end of the 90's was the climax of this anarchic chaotic urban condition and finally Edi Rama and the municipality ordered to demolish the illegal constructions erected in the public space, this was effective and rapid. As a result river banks, parks were planted and seeded again as well as sidewalks paved and used as a public space.

Then after Rama's "reparation" period the "growth" one arrived. This was marked by an international design competition (2004) for the renewal of Tirana's centre, focusing specifically on the main urban axis, starting from the train station to the University building (former Casa del Fascio) extending few blocks on both sides. The winning entry master-plan by the French firm Architecture Studio revealed a truly antithetical strategy with respect to the scale, form and character of the existing city. The compact urban system has been already disrupted beginning few years ago with the growth of vertical corporate towers while the destruction is still on going legitimated and programmed now by the municipality.
I
n fact the former major Edi Rama's urban policy refused the city of the past exactly as his predecessors did. In an interview he says "Tirana is a city of contradictions. We are trying to get rid of the past and are working hard to catch up with the future. […] I think Tirana will always be a neglected city. […] The need to gain and to gain fast is in this country the expression of a sort of revenge on the past […] and when you run you make a lot of mistakes, a lot of small disasters"

In Tirana the dramatic consequences on the urban structure are tangible and evident to all; the actual condition reveals a city marked by delirious contradictions and chaos. This condition deteriorated even more since 2004, when Rama, rather than adopting an urban planning code, promoted the international competition, to "modernize" the urban centre. The master plan is currently changing the central part of the city with the addition of skyscrapers scattered around, while the main Skanderberg square, a nation symbol, has been dismantled and is conceived as a wide esplanade.

There are many criticism we can move to Rama's governance, first of all he did not have a general urban plan for the city while he accepted a vertical image for the centre, running after a consumerist concept of modernity. Roads and general public systems cannot support the intensity of the vertical city construction. The city is in a desperate lack of infrastructure as roads, sewage, parking, sidewalks, good and reliable public facilities. Plus the presence along the axis of important buildings abandoned in decay as the National Gallery of Art and the Daijti Hotel, which should be restored as they represent exemplary elements in the city's history.

Dense vertical residential city solves land consumption problem but nevertheless it is relevant to chose the appropriate place for these developments. In fact this part of town has a specific historical culture and structure which is the result of thoughtful planning (from the '30) as well as of destructive gestures (as the bazaar raze). This was the time to preserve identity and not, once again, to inflict a radical change. Rama missed an important opportunity.

Tirana and its future

This observation on the contemporary city offers a matter of discussion and reveals the sharp contradiction between the 2004 plan and the urban founding paradigms. The knowledge of the public city, along the main axis, defines the horizontal character which interprets the surrounding landscape and traditional ottoman houses. This condition is now blurred and transformed by Rama's towers, expression of private corporate investors which neglect the public vocation of the city while celebrating the iconic verticality as the result of lavish investments. Particularly, the landscape vision in the citizens' awareness is erased. The Daijti Mountain horizontal vision toward east is interrupted by vertical buildings which create a discontinuous landscape image in-between the tall constructions.

Rama searched an ultimate and radical image of the city which celebrates the upraise of modernity as well as his urban policy. These event, of course, gave arguments to his opponents and contributed to his failure in recent elections (2011) after 12 years of undisputed power and control on Tirana urban policies.
Now Tirana has a new major, Lulzim Basha, public works are interrupted and no progression is given to the Architecture Studio Plan and to the "Swiss Plan" . In fact in 2011, after the election, the Municipality of Tirana restarted the consults for Tirana's urban plan with new firms. "These are actions that aim to stabilize the situation where it is near collapse, due to poor planning […] the plan will be executed very soon, for normalizing the complicated and near-collapse situation in different sections of the city, especially in the center" .

Conclusion

The loss of tangible heritage in Albania has, today, reached devastating proportions in the ambit of environment conditions and monuments abandonment. The built heritage is in ruins. Old buildings are easily knocked down. They are considered an expression of a valueless past, which has to make room for the "new" in the belief of a better future. We may observe that the accelerating process of development pursues modernity at all costs.
This study seeks to encourage the possible integration of tradition in the change-processes, reinterpreting traditional urban space and residential typologies. It is important and urgent to promote sustainable development projects in order to stop potential disintegration, perpetuated by those who lack respect for environment and monumental heritage.
The practical implication of this paper is to develop specific researches on architectural and urban forms in order to document and preserve the superb character of construction within their own natural environment. Furthermore, to establish and develop the value of landscape as a cultural heritage which has to be respected and shared. The country has been, in this past twenty year, intensively active in search for redemption from poverty and the sustainability of development was not a primary issue. Now it is time to heal from the unscrupulous exploitation of the land and to bring responsibility in action as the first issue to discuss.

Bibliography

Aliaj B., Lulo K., Myftiu G., Tirana. *The Challenge of Urban Development*, SEDA and Co-PLAN, Tirana, 2003

Cortesi I., *The Price of Freedom. A country in decadence: the rapid loss of tangible heritage in Albania* in Amoêda R., Lira S.,

Pinheiro C. editors, *Heritage 2010*, Green lines institute, Barcelos, 2010, pp. 821-826.

Cortesi I., *The handing down of construction craftsmanship for a sustainable development in Albania* in Amoêda R., Lira S., Pinheiro C., Pinheiro J.,Oliveira F. editors, *Sharing Cultures* 2009, Green lines institute, Barcelos, 2009, pp.173-179.

Stiller A. editor, *Tirana. Planning, Building, Living*, Müry Salzmann publisher, Salzburg-Vienna, 2010

Traglia G., *L'Albania di re Zog*, Ed. Tiber, Roma, 1930.

Recent urban planning in http://en.wikipedia.org/wiki/Tirana

Notes

[1] Haller M., "Beyond the future" in Stiller A. editor, *Tirana. Planning, Building, Living*, Müry Salzmann publisher, Salzburg-Vienna, 2010, in pp.75-80.
[2] Numerous urban plans were laid for Tirana by various consultants over the last 20 years first by an Austrian firm (1995) followed by a group composed of PADCO, GHK and the Graduate School of Design of Harvard University. The plan was then updated by PADCO in 2002 into a Strategic Plan for "Greater Tirana". In 2002, two German consultants, German Technical Cooperation and Institute of Ecological and Regional Development worked on the Tirana-Durrës region. A detailed site plans for the city center was prepared in 2004 by French Architecture Studio and in 2010 by the Belgian architectural firm 51N4E. In 2007, a larger strategic plan was developed by Landell Mills Development Consultants and Buro Happold. Furthermore two reports were prepared by Urbaplan and CoPlan and released in 2007 and 2008. However, the plan was turned down by the National Planning Council of Albania.
[3] Interview with the new major Lulzim Basha on 08/09/2011 in http://www.top-channel.tv/english/artikull.php?id=2589

Anca Dumitrescu M.
Tampere University of Technology, Finland

Dealing with change in the world heritage site of Old Rauma

The town of Rauma was acknowledged and received its charter in 1442. It has been developing and changing ever since. As an urban, historic area Rauma cannot be disconnected from development and time flow, and as such change is an intrinsic reality of the site. However, growth and physical transformations are not the only important attributes of change, and one has to also consider changes in concepts, values, social structure, attitudes, perceptions, practice and visions for development. The purpose of this paper is to define change in relation to Old Rauma, to understand how some of the values and characteristics of the town transformed over time and how this impacts the present.

Changes in concepts and values:

World Heritage Sites are the most valuable and universally significant places of 'shared' history and culture, and they all meet the highest requirements of cultural relevance. The issue of perception is becoming increasingly important, especially when considering the evaluation and promotion of heritage. Although the intrinsic values of a site might remain unaltered, by considering perceptions and raising awareness, the overall importance and value of a place can be enhanced.(Lehtimäki, 2006).
The need to consider and protect historic cities as part of heritage has been clearly outlined since 1987[1] . In the Nordic Countries this issue has been addressed in the Nordic Wooden Towns project of 1970-1972. The conservation doctrine evolved through activities and publications by UNESCO, ICOMOS, and the Council of Europe, focusing on the multi-disciplinary understanding of heritage, closer considering the user and stakeholders, and bringing the role of intangible heritage[2] into focus. In 2006, the Sustainable Historic Towns Project Report[3] (Lehtimäki, 2006) pointed out that the understanding and conservation of historic urban heritage needs to be expanded, communication between stakeholders[4] needs to be enhanced and a common language needs to be used[5]. The interdisciplinary approach to the sites' interpretation is still lacking, and a satisfactory, holistic tool still needs to be developed.

Old Rauma's growth and changes over time: (map 1)

Rauma was first mentioned as a settlement in connection to the building of the Holy Trinity Church in the 14th century. The town was defined by the **functional triad** consisting of the religious core, the economic trading center and the harbor, which gave the place its initial identity and determined the direction of growth. The religious pivot was represented by the Holy Trinity Church until 1640 when the church was destroyed by fire. It was replaced by the Church of the Holy Cross, a stone 15th century church initially belonging to the Franciscan Monastery. The town, however, did not receive its charter or the official privileges, including commercial trade, until the 15th century[6]. In 1620 the **customs fence** for collection of petty duties was built (map 2), indirectly restricting the physical growth of the town until the beginning of the 19th century[7]. The dense historic core therefore partially owes its structure, endurance, and coherence to the customs fence, providing an eloquent example of how an administrative and economic tool shaped the face of a city and controlled its development for almost two centuries.

Fire has been one of the major causes of change up until 1682, as most of the building material used in the area has been wood. The 1682 fire is a crucial moment in the recorded history of the town because it destroyed the vast majority of the building stock in Old Rauma[8] allowing for the streets to be straightened and for most of the wooden houses in the center to be rebuilt. The moment is also relevant, because, aside from a 1650 sketch[9] by Hans Hansson, there are no maps or surveys of the area prior to the fire. The earliest detailed map of the town dates to 1756. However, according to some studies[10] (Hiekkanen, 1983) Kalatori is certainly the oldest medieval market of the town, toward which most of the town's streets converged, and which was also remodeled after the 1682 fire. It is considered (Hakanpää, 2009) that the fish market, Kalatori, and the Holy trinity Church, now in ruins, represent the core of medieval Rauma[11].
Another notable change in Old Rauma concerns the position and relation of the **harbor** to the old town. It is known that coastal cities formed around the Bothnian Sea experience over time a shift in the connections' dynamic since the sea is receding and the land is rising. Moving the harbors and trading centers closer to the sea redefines the connections within the city as well as the historic core itself. According Aina Läteenoja (Läteenoja, 1932), the old harbor became impracticable starting with the 19th century[12] and had to be moved further to the south – west. In 1851 a decision had been taken to excavate the canal connecting the town to the harbor. From 1851 to 1863 major works to the canal and market place have been carried out, in order to improve accessibility and drainage systems. The canal was completed and became navigable in 1872 but construction and maintenance works continued all throughout the 19th century. Neither the harbor nor the canal belongs nowadays to the protected area or to its buffer zones.

The late 1800s and early 1900s further contributed to the changing of the Rauma archipelago, through the building and extension of the railway, and through the new connections between the port and the industrial areas. The construction of the railroad, linking the industrial harbor area with inland Finland, has been a key moment in the development of industrial Rauma. It naturally divided the town in two areas to the north and the south of the tracks, but it also promised to improve connectivity with the rest of Finland. In 1897 the railroad, train station and outhouses were completed, and have been used until 1988 when passenger transport was suspended as unprofitable.

Changes in demographics, attitudes and perceptions indirectly affected the development and transformation process of the town. Population growth, social changes, changes in occupation, the rising of new social classes, economic growth, building policies, development of the legislative system are all key factors that determined physical changes of the city and its typology.
The end of the 19th century and beginning of the 20th century brought large scale industrial development in Rauma: the steam saw mill 1862, the electrification of the town in 1902, the founding of the wood and glass factories in 1911. The city's growth both in its economic and physical dimension, created a different type of townscape shaped around the newly established industrial pivots and away from the residential and commercial historic core of Rauma. Within the historic area, the crafts gained more importance and started to function in rented houses and studios, increasing the role of 'the tenant' as a stakeholder[13].
Some of the physical changes in the urban fabric triggered by the change in attitudes and incomes of the 19th century are remodeling the facades of existing buildings and using the new architectural syntax of Neo-Classicism and Neo-Renaissance[14], noticeable especially in facades and details (Lilius, 1985). It is between 1870 and 1920 that Kauppakatu began to be shaped in what is today the city's commercial street[15] (Saarikoski, 1999).

Heritage practice and Old Rauma today (map 3)

Heritage protection:
The protection of historic groups of buildings has been clearly covered by international charters[16] and conservation guidelines, but the historic town is far too complex to possibly be covered by the same documents. One of the main problems faced by any international guidelines is that they risk being either too rigid, and cannot be followed to the letter, or too vague, and can offer little support to the on-site practice. In general, local authorities analyze the values and specificities of the heritage and devise protection policies, filling the gaps left by the international charters. In Finland, however, the legislation does not cover the protection of '*Historic Cities*', as cities are legally protected through their Local Masterplans. Concepts such as 'authenticity', 'integrity', 'outstanding universal value' are considered only indirectly for Finland's World Heritage Sites and there is still a need to define the relation between theoretic concepts and practice.

Historic layers and characteristics:
Rauma is a living town bearing a significant layer from the industrial era, which initially developed in close connection to the natural landscape of the coastline, and whose historical center has been continuously inhabited. The break between different layers of development can be partially explained by the fact that only the '*historic center*' of Rauma has been considered outstandingly valuable. In 1991[17] the ideas of a 'cultural landscape'[18]or 'heritage canal'[19] were not yet developed, so Old Rauma was analyzed as a 'historic center'. However, after the re-evaluation of the property in 2009, the only changes to the protected area were minor boundary modifications of the buffer zone.

In terms of '**authenticity**', Old Rauma's historic layers are mostly truthful to their original design, traditional use and techniques, spirit and feeling, and original substance, thanks to the town's bank of spare parts[20]. However, given the perishable nature of wood, the authenticity of the material substance has to be considered in a flexible manner, as the replacement of original elements is often unavoidable. The continuous use of the town makes it difficult to establish a clear hierarchical relation between authenticity in spirit and in design, resulting in inconsistent, contradictory and sometimes duplicitous planning decisions.

'Integrity'[21]can be expressed in an objective, scientific manner, and in the case of Old Rauma only about one third of the area is accessible as part of the public space. There is a difference between the perceived and the actual scale of the historic core, as one can access and experience only a portion of this universally valuable site. The continuous development and living in the urban center is what links integrity to authenticity and defines the urban coherence. If the continuity is broken by employing administrative borders, the resulting fragments risk losing part of their authenticity in spirit, and become 'museified' pieces of heritage. Another point needing to be scrutinized is whether the significance of historic centers in their entirety is made accessible to the users so that they may understand and appreciate their 'integrity'. Old Rauma is only partially accessible to users, in terms of both on-site accessibility and easily available information.

'Awareness' is a concept important for the promotion and conservation of historic sites, and it is usually associated with the identity value based on recognition[22] and emotional, subjective ties between the stakeholders and heritage. **Identity** in this context relates to the perceived values associated to the site by its users. However, the identity of a place can also be defined by those elements that brought the place to existence: commercial roads, built landmark elements, monuments, natural landmarks. A break in the coherence of the historic narrative of the place can occur if these objective, tangible elements become devoided of their identity value. Raising awareness in this case refers to informing the stakeholders and educating the public in order to reinstall the identity of the place.

The management plan[23] is an essential administrative tool used to define the development and protection objectives and means to achieve them, while ensuring that the conditions of integrity and authenticity are maintained and enhanced. However, in some cases it can become excessively pragmatic, failing to tackle heritage in a holistic manner. In Rauma the management plans[24] should also focus on aspects that cannot be regulated by law and the local plan, addressing delicate issues such as the private property and private investments in the area. Although motivating the employees or, in this case the stakeholders[25], is an essential component of the management plan, in some cases this process it is left unaddressed.

Old Rauma today:

Potential threats:
Old Rauma, with its two main commercial streets and Kauppatori as its main commercial market, is still a central part of the city and of its commercial core. The role and position of Kalatori – the main historic, traditional medieval market – became secondary starting with Kauppatori's accelerated development of the 20th century. Therefore, the traditional center of the historic area has gradually been displaced.
According to Tanja Vahtikari (Vahtikari, 2004) there was no perceived difference between Old, historic Rauma and the city of Rauma until the 1940s[26]. Since the acknowledgement of the value and importance of the historic area[27] the gap between the historic and the 'contemporary' town deepened. Connectivity, flow, accessibility and traffic to, from, and within the historic core are becoming increasingly important. Issues such as the balance between pedestrian and vehicle access have been discussed and analyzed without reaching a satisfactory conclusion.

Historic area division, borders and connections:
The dynamic of development, the strength of the connections within the city, the coherence and continuity of the cityscape can become threatened by defining borders and limits to areas of different values and by defining different protection attitudes for those areas. In Rauma, the protected historic area can be divided into 5 different subzones[28] according to the typology of the plots, the function of the buildings and the representativeness of the architecture[29] . The buffer zone is also divided in 15 different functional areas, all with different character, some of which rooted in the industrial era. The border between the old city and its surrounding areas can be read at a city scale, as granularity changes, but also in terms of style and design. Inwards, the area of the old historic core defined by its three strength points: the museum, the city hall, and the church, is culturally and functionally much stronger than the all the other areas surrounding it. Fragmentation of the urban continuity has to be considered as a potential risks, as well as the weak connection between the old core and the rest of the city[30].

Values and their protection:
In terms of protection, the historic layers in Old Rauma reflect in their great majority the history of the area prior to the industrial age. Many of the buildings of the 20th century are overlooked when considering the protection of the site[31]. In some cases, the decisions taken emphasize all historic layers, but often the replacement of facades or buildings risks erasing layers from the fabric of the city. Sometimes the modifications of a building's mass, roof, façade texture or openings is considered the best solution for the building's integration in the historic area, although this means denying its historic authenticity.
Ulla Räihä has noted (Räihä, 2005) that research and re-evaluation of the overall values of the site, considering all the stakeholders, has not been made[32]. A task difficult to achieve is making information openly accessible to all: firstly because most of the studies and documentation were elaborated in the late 1970s; secondly because heritage owners are entitled to their intimacy and privacy. The identity of Old Rauma also resides in the typology and the feeling of the courtyards, most of which are privately owned. A recent initiative permitted access for visitors and townsfolk to these private areas for a week during the summer. The initiative has been welcomed by visitors and locals alike, as the opportunity to explore the less known face of the town allowed them to get a better feeling of the place. This brings to attention once again the fact that Rauma is a dual city: a city of life and a city of culture, a city of privately owned houses and a city of public functions. There is an obvious need for a better negotiation between these two facets and for the usage of modern surveying and information dissemination techniques that haven't been employed so far in Old Rauma.

Conclusion:
One of the most notable changes for Old Rauma was its nomination as a World Heritage Site in 1991, when the site changed from being locally important to being universally valuable for all. As a World Heritage Site, Old Rauma is not being used according to its full potential. The insufficient documentation and dissemination of the available data, as well as underusing existing resources, prevents the enhancement of present values. The main purpose of the protection polices and management plans required by UNESCO is to maintain and enhance the outstanding universal values of the site. Maintaining the site's values comes naturally for its users, since its continuous use established a tradition in protecting and conserving the existing. Enhancing the site and presenting it as a universally relevant World Heritage Site is more delicate since it involves a change in attitude. Many of the sites' values, identity points and connections are being considered 'common knowledge' as they are well known by the locals and well established through tradition, such as the small boat docks and piers along the canal, the connection with the sea, and the important landmarks within the buffer zones, all of which are seemingly hidden from the outsiders. Connectivity with inland Finland or other heritage sites is not being seen as crucial, as the bus service and road network prove satisfactory for the needs of the town. However, Old Rauma is also a universally valuable World Heritage Site, and as such, understanding its values, characteristics and historic layers is important for all stakeholders involved. Connectivity and access to the site should be considered from an international standpoint at least in terms of the site's presentation and promotion on an international platform. The buffer zone of Rauma can be redefined and used

to enhance the visitor experience, as well as, the understanding of the site, rather than as a protection cushion. Future changes to Old Rauma could lead to a better understanding and representation of its universal character, and could improve the accessibility to information and to the site itself for all stakeholders.

Notes

[1]ICOMOS Charter for the Conservation of Historic Towns and Urban Areas
[2]Convention for the Safeguarding of the Intangible Cultural Heritage.UNESCO. 2003
[3]ed. Lehtimäki, Marianne. 2006. *Sustainable historic towns - Urban heritage as an asset of development*. Porvoo. (http://www.spatial.baltic.net/_files/SuHiTo_Report.pdf. accessed December 2011)
[4]Ibid. especially between planning authorities and users of the site.18
[5]A number of concepts need to be re-analyzed: continuity, authenticity, identity, integrity, awareness and the necessity of a management plan.
[6]17th of April 1442 Rauma receives privileges of charter.
[7]in 1808 the petty customs levy was abolished and the custom gates removed, allowing the expansion of the building area.
[8]150 houses, all public buildings, the Holly Cross Church's roof and the belfry, (Hakanpää, Päivi. 2009. *Rauma-Raumo, Rauman kaupunkiarkeologinen Inventointti.* Museovirasto. 10.)
[9]Hakanpää, Päivi. 2009. *Rauma-Raumo, Rauman kaupunkiarkeologinen Inventointti.* Museovirasto. 11.
[10]Hiekkanen, Markus, 1983. *Keskiajan kaupungit 2. Rauma. Varhainen kaupungistumiskehitys ja nykyinen suunnittelu*. Museovirasto. Helsinki. 43-44.
[11]Hakanpää, Päivi. 2009. Rauma-Raumo. Kaupunkiarkeologinen inventointi. Museovirasto. http://www.nba.fi/fi/File/708/rauma-raumo.pdf (accessed January 2012)
[12]Läteenoja, Aina. 1932. *Rauman kaupungin historia: Rauma 1809-1917*, Vol. 4. Länsi-Suomen kirjakauppa, jakaja. 62.
[13]Although the tenants have been important stakeholders starting with the beginning of the 19th century, in 1912 the tenants represented 75,4% of the total population, they never had a voice in the decision making and in the development of the town.
[14]Lilius, Henrik. *Suomalainen puukaupunki = The Finnish wooden town*. (Anders Nyborg,1985), 170-178.
[15]Saarikoski, Antero. *"Kaupunkirakenteen muutos Raumalla 1756-1912"* Lic. diss, Teknillinen korkeakoulu Arkkitehtiosasto. Helsinki. 1999. 21.
[16]starting with the 1964 "International Charter for the Conservation and Restoration of Monuments and Sites" (Venice Charter)
[17]Old Rauma was nominated as a World Heritage Site in 1991, based on studies and documentation mainly elaborated and presented in the 1980s.
[18]1992. WHC-92/CONF.202/10/Add La Petite Pierre. France. October 1992. 24 – 26;
1992. WHC-92/CONF.002/12.The Operational Guidelines by the World Heritage Committee.16th session. Santa Fe
[19]1994. Report of the Expert Meeting on Heritage Canals. Canada. September 1994
[20]Vanhan Rauman varaosapankki, established in 1974.
[21]"Integrity is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes" 2008."*UNESCO World Heritage Centre - The Operational Guidelines for the Implementation of the World Heritage Convention.*" http://whc.unesco.org/en/guidelines. (accessed january 2012)
[22]Feilden, Bernard. 1998. *Management guidelines for world cultural heritage sites*. 2nd ed. Rome: ICCROM. 18.
[23]The management plan is intended to 'specify how the outstanding universal value of a property should be preserved, preferably through participatory means.' 2008."*UNESCO World Heritage Centre - The Operational Guidelines for the Implementation of the World Heritage Convention.*" http://whc.unesco.org/en/guidelines. (accessed january 2012)
[24]The management plan for Old Rauma is currently being developed by the local authorities.
[25]Motivating the users of historic centers can be achieved through various fiscal measures or economic levers, but it can also be achieved if the management plan can present options available for protection and provide scenarios for future development and sustainable use.
[26]Vahtikari, Tanja. "The (Self-) Perception of the Historic City: Case study of the Finnish World Heritage City Old Rauma". Paper presented at the Seventh International Conference on Urban History, Athens-Piraeus, October 2004.4.
[27]The interest for the historic value of the towns appeared in the late 1940s, culminating with the 1972 congress on Nordic wooden towns.
[28]*Vanha Rauma-Old Rauma*.1992. West Point. Rauman Museo.
[29]The first subzone represents the core of Old Rauma, with the main commercial functions, and the representative buildings, the 'eastern customs' area is defined by larger plots, representative housing of rich, while a third area around the western custom gates is characterized by smaller plots and residential architecture with less lavish facades The fourth typological area within the denominated protected area is Naulamäki, with architecture specific for the residences of seafarers and town folk and the fifth area is representative for Old Rauma because of its plot typology.
[30]Hakanpää, Päivi. 2009. Rauma-Raumo. Kaupunkiarkeologinen inventointi. Museovirasto.http://www.nba.fi/fi/File/708/rauma-raumo.pdf (accessed January 2012)
[31]Particularly buildings, layers and additions of the 1960s, 70s and 80s are considered disruptive for Old Rauma's cityscape.
[32]Räihä, Ulla. 2005. Vanhan Rauman asemakaavan muutoksen tavoitteet. Rauma. (http://www.rauma.fi/tevi/kaavoitus/kuvat/VR_amk_yleistavoitteet_L050415_osa3.pdf accessed January 2012)

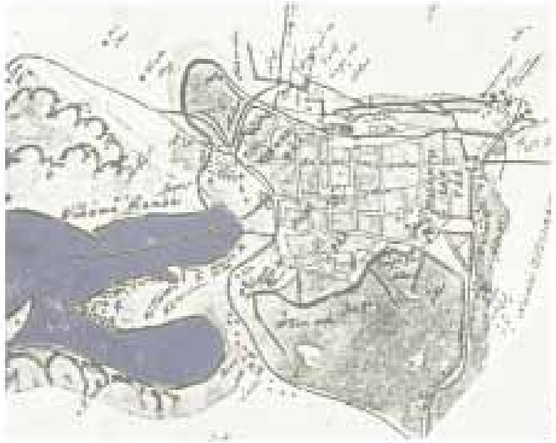
Bibliography:

1. Hakanpää, Päivi. 2009. Rauma-Raumo. Kaupunkiarkeologinen inventointi. Museovirasto
2. Hiekkanen, Markus, 1983. *Keskiajan kaupungit 2. Rauma. Varhainen kaupungistumiskehitys ja nykyinen suunnittelu*. Museovirasto. Helsinki.
3. Lehmuskallio, Pekka. 1991. *Rauma ja mer*i. Rauma: LÄNSI-SUOMI OY.
4. Lehtimäki, Marianne.edit. 2006. *Sustainable historic towns - Urban heritage as an asset of development*. Porvoo. (http://www.spatial.baltic.net/ files/SuHiTo Report.pdf. accessed december 2011)
5. Lilius, Henrik. *Suomalainen puukaupunki =: The Finnish wooden town*. (Anders Nyborg,1985)
6. Läteenoja, Aina. 1932. Rauman kaupungin historia: Rauma 1809-1917, Vol. 1-4. Länsi-Suomen kirjakauppa, jakaja.
7. Räihä, Ulla . 2005. Vanhan Rauman asemakaavan muutoksen tavoitteet . Rauma.
8. Saarikoski, Antero. *"Kaupunkirakenteen muutos Raumalla 1756-1912"* Lic. diss, Teknillinen korkeakoulu Arkkitehtiosasto. Helsinki. 1999.
9. Suikkari, Risto.edit. Historical European Towns – Identity and Change. University of Oulu. Kaleva 2000
10. Vahtikari, Tanja. "The (Self-) Perception of the Historic City: Case study of the Finnish World Heritage City Old Rauma". Paper presented at the Seventh International Conference on Urban History, Athens-Piraeus, October 2004
11. Baltic Sea Identity. Common Sea – Common Culture? Ed. Litwin Jerzy. 2003.Gdansk.
12. Convention for the Safeguarding of the Intangible Cultural Heritage. UNESCO. 2003
13. ICOMOS Charter for the Conservation of Historic Towns and Urban Areas
14. Report of the Expert Meeting on Heritage Canals. Canada. September 1994
15. *Suuomalaisia puuukaupunkeja: hoito, kaavoitus ja suojelu = Finnish wooden towns : = care, planning and conservation.* 1995. Helsinki: Selvitys.
16. *"UNESCO World Heritage Centre - The Operational Guidelines for the Implementation of the World Heritage Convention."* 2008. http://whc.unesco.org/en/guidelines
17. *Vanha Rauma-Old Rauma*.1992. West Point. Rauman Museo. 29.
18. WHC-92/CONF.202/10/Add La Petite Pierre. France. October 1992.
19. WHC-92/CONF.002/12. The Operational Guidelines by the World Heritage Committee. 16th session. Santa Fe 1992

Illustrations:

1. Old Rauma in 1756, as shown by Hiekkanen, Markus.1983. Keskiajan kaupungit 2. Museovirasto, Helsinki
2. Custom gates of Rauma in 1773, as shown by Hiekkanen, Markus.1983. Keskiajan kaupungit 2. Museovirasto, Helsinki
3. Rauman keskustan osayleiskaava, kaavakartta, available online: http://www.rauma.fi/tevi/kaavoitus/kuvat/osayk141004.pdf (accessed January 2012)

Map 1: Old Rauma in 1756, as shown by Hiekkanen



Map 2: Custom gates of Rauma and relation to the harbor, 1773

Map 3: Rauma center, Master Plan 2011

Sylvie Duvernoy
Università di Firenze, Italy

Perspective, visual perception and urban planning

The study that is presented here is part of a broader investigation on the problem of conservation (and eventual restoration) of historical city centres, and was prompted by the necessity to define a strategy to preserve the *image* of the centre of Florence, which is part of the UNESCO World Heritage. The image of a place is related to sensorial perception. This study focusses on the relationship between natural vision and perspective views, and will try to understand how much the *images* of urban spaces – views and vedute – have been under control of the designers in the past, and how strongly they are now rooted in our cultural heritage.

In his famous essay entitled *Perspective as a symbolic form*, which first appeared in 1927, Erwin Panofsky (1892–1968) opposes "perspectiva naturalis" to "perspectiva artificialis".

The concept of "perspectiva naturalis" refers to classical culture and to the science of Optics that in ancient Greece involved both the study of the properties of light, and the study of natural vision. The treaty entitled *Optics*, written by Euclid (300 B.C. ca.), is the more ancient, still extant, scientific text which systematically inquires the discrepancies between reality and appearance. Eyesight is a deceiving sense: parallel lines appear to meet in the distance, horizontal lines seem to rise or to fall, and objects' sizes seem to reduce while moving away. Platonic philosophy claimed that sensorial perceptions were only the first stepping stones of cognition, and the understanding of a deeper reality beyond the sensory impressions constituted the true process of learning. In Optics, a treaty divided in 58 propositions, Euclid describes the phenomena of natural vision from a geometrical standpoint, thus converting subjective perception into a rational set of mathematical laws. All demonstrations are based on some initial postulates that state that linear visual rays depart from the eye of the observer and reach the vertices and edges of any seen object, thus forming a visual cone whose vertex lie in the eye of the viewer and whose base is the object itself. Also, in Euclid's theory of vision – just like the stars on the sky dome – the images of the seen objects project themselves on a spherical surface whose centre is the eye of the observer. Consequently, the perceived size of any object is related to the angle of the visual cone, which in turn is a consequence of both the true size of the object itself and its distance from the viewpoint. Equal objects do not generate equal visual cones when their distances from the eye are unequal. In the fundamental proposition 8, Euclid shows how and why the perceived sizes of two equal objects are not directly proportional to their distances from the eye of the observer.

Optics is a theoretical mathematical treaty which is not concerned with any application field. Unfortunately no equivalent contemporary text on painting or perspective drawing has been preserved, even though we know from Vitruvius that some writings did exist.[1] Many studies have been conducted my modern scholars on the relationship between science and art in antiquity. Their purpose was to understand what kind of geometrical rules did the ancient Greeks and Romans apply, while drawing perspective views and *trompe l'oeil* wall paintings. Discussions are still open. However Panofsky points out that:

Antique perspective is thus the expression of a specific and fundamental unmodern view of space (although it is certainly a genuine spatial view, Spengler notwithstanding). Antique perspective is furthermore the expression of an equally specific and equally unmodern conception of the world.[2]

If Euclid's geometry of vision based on the concept of visual cones constituted a specific mental representation of the space and the world, then an inquiry on the reciprocal influence between representation and design seems appropriate. Did the Euclidean conceptual representation of space influence the design of urban spaces? Did it generate a concept of order that acted as a basis for urban design?

A few years before Panofsky's study on perspective, in 1923, Le Corbusier (1887– 1965) published a book entitled *Towards a New Architecture* in which directions were given to young architects to design good modern architecture. The Acropolis of Athens is listed among the beautiful examples of the past, from which a modern designer must draw inspiration. Le Corbusier praises its beautiful plan, the arrangement of the buildings and the statues, whose "apparent lack of order… could only deceive the unlearned".[3]

The whole thing, being out of square, provides richly varied vistas of a subtle kind; the different masses of the buildings, being asymmetrically arranged, create an intense rhythm. The whole composition is massive, elastic, living, terribly sharp, keen and dominating.[4]

This fervent depiction is directly inspired by the description of the Acropolis given by Auguste Choisy (1841–1909) in his treaty entitled *Histoire de l'Architecture*, first published in Paris in 1899. Choisy points out how the arrangement of the various temples on the site does not follow a geometrical order in which the monuments are symmetrically put with respect to a central axis, but is the result of a visual composition where each volume on the right is balanced by a volume on the left, and where no temple is seen frontally but all show a corner and two sides to the arriving visitor. Choisy argues that the whole planning of the Acropolis was intended to display a succession of *pictures* (or views) that had to be seen from specific spots located along the visitor's path. Those views were designed according to three principles: 1- an outstanding subject for each (a major temple or statue); 2- three quarters views of every building and statue present in the view field; 3- harmonious visual balance of volumes.

More recently, other sacred precincts were surveyed and studied with a similar approach by Constantin Doxiadis (1914–1975), a Greek architect and urban planner. The results of these studies were published in 1972, in a book entitled *Architectural Space in Ancient Greece*. Doxiadis, like Choisy, points out how, in each sacred precinct, the positions and orientations of all buildings were arranged in order to display a specific image from a specific viewpoint, namely the entrance gate to the precinct itself. According to Doxiadis the planning system was based on a system of polar coordinates referring to a specific a pole (viewpoint), and the positions of the various buildings (temples, stoas, altars…) were determined not only by the angle of vision but also by their distance from the viewpoint. The author then lists a series of eight design principles which somehow repeats and implements the principles that Choisy had already formulated. He furthermore attempts at finding numerical rules for the angles of vision containing the buildings, stating that the overall field of vision was regularly divided in equal angles, each containing a building, located either close or far from the observer. He adds that, frequently, in the centre of the field of vision, one angle was left free, opening to the surrounding landscape. This void angle represented the path to be followed by the person approaching the site, being the "sacred way".

Those studies tend to show that a strong relationship existed between science and art in ancient Greece around the fifth and fourth centuries B.C. The system of arrangements of the buildings in a sacred precinct, which seemed at first sight to be no system at all, actually reflected a carefully planned organization. Euclid's geometrical laws of vision were echoed in the visual order that every site displayed.

The concept of "perspectiva artificialis" refers to graphic geometry: the science of representation that allows artists to draw on a flat surface an image closely simulating the natural vision. The mathematical theorization of the so-called linear perspective occurred in the Early Renaissance and was the result of many joint studies conducted by several Italian and European artists and mathematicians. The very first written rules for constructing a linear perspective were put together by Leon Battista Alberti (1404–1472) in his treaty entitled *De Pictura*. These first empirical rules, which were later more scientifically formulated by Piero della Francesca (1412?–1492) and others, point out the common basis between perspectiva naturalis and perspectiva artificialis. Both share the concept of visual cones formed by linear visual rays that connect the eye of the observer to the contour of the seen object. However the image of the object is no longer considered to be projected on a spherical surface of which the viewpoint is the centre, but on a vertical plane put between the object and the eye, intersecting the visual rays. The image resulting from the intersection of the visual rays and the picture plane is the best possible graphic approximation of a still, monocular, natural view. Thanks to the mathematical definition of the vanishing points (*Punto centrico and Punto di distanza*) Italian painters were able to solve the primary and fundamental problem of the exact representation of a foreshortened horizontal "checkerboard" floor. This important achievement made it possible to represent the three dimensions of space exactly as they were perceived by the human eye. Reciprocally, distances (lengths, depths and heights) of the depicted space could eventually be measured from the drawing itself. Perspective was no longer a deceiving appearance but could act as a scientific design tool. Also linear perspective finally provided an answer to the tricky question of finding a simple proportional law between the perceived size of an object and its distance from the viewpoint. In one-point linear perspective, flat figures belonging to planes parallel to the picture plane keep their true shape, and their sizes decrease proportionally to their increasing distance from the viewpoint. Perspectiva artificialis thus provided a partial answer to the ancient scientific discussion echoed in proposition 8 of Euclid's *Optics*, which the Greeks could not solve thanks to the laws of perspectiva naturalis.

The three famous paintings known as the panels of Urbino, Baltimore and Berlin, showing ideal cities, are the earliest and most famous examples of relationship between urban design and linear perspective.[5] The three paintings are roughly contemporary, and were all presumably done in Urbino, at the Court of Federico da Montefeltro. All paintings show the central Piazza of an ideal city, where the surrounding monuments are precisely aligned on the square units of a richly decorated ground. The concept of ideal beauty is strongly related to geometrical order, to parallelism and orthogonality, to symmetry with respect to a central axis. The viewpoint itself is located along the central symmetry axis, and the vanishing point is in the centre of the painting. In two of the pictures, the central axis is open, extending to the natural environment: towards the sea port or through an arch that opens to the infinite.

Orthogonal grids and patterns had been applied to the planning of new towns since Roman times, and through the Middles Ages. The panels, therefore, do not show an innovative urban design system, but they make use of an innovative drafting technique to represent the planning options. The perspectiva artificialis turns out to be an efficient means to depict and emphasize the beauty of the geometrical order that symbolizes the social order of the ideal city.

Today, the actual shapes of the urban spaces of our historical European cities can be related either to a "visual order" that displays buildings and objects in a loose panoramic array, either to a "geometrical order" based on regularity, symmetry (sometimes uniformity) of solids and voids. The contemporary city is the result of a superimposition of several historical layers, and is composed by a variety of urban spaces that were designed, altered, extended, distorted and remodelled in various periods of time. Preserving the image of the city means preserving the features of each space: preserving their "order", whether visual or geometrical.

The historical centre of Florence was included in the World Heritage List nearly thirty years ago. Since then, the city administration has been promoting many actions aiming at the preservation and restoration of the historical image of the city. One of the most important actions was the creation of a wide pedestrian area which includes many of the most important urban spaces, the maintenance of which is quite delicate. The risk is to start a process of uniformisation that will smooth the differences between the many piazze of the city.
Piazza della Santissima Annunziata, Piazza della Repubblica, are among the urban spaces that show an intentional geometrical order, whereas Piazza della Signoria is an aggregation of spaces that offers many different views. Some other spaces are a combination of visual and geometrical orders.

Piazza Santissima Annunziata and Piazza della Repubblica.

Those two piazze dating one from the Renaissance and the other from the end of the nineteenth century have been both designed on the base of a strict geometrical order. The rigorous application of a mirrored symmetry with respect to a major axis involves and defines both the shape of the urban space itself, and the fronts of the surrounding buildings. In both cases a second axis crosses the first one at right angle in the middle of the piazza and defines the architectural symmetry of the side buildings.

The historical evolution of Piazza Santissima Annunziata is that of a growing geometrical order. First the East loggiato of Brunelleschi's Hospital (early XVth century), then its mirrored image designed by Antonio da Sangallo and Baccio d'Agnolo (early XVIth century), and last (end of the XVIth century), the portico of the church that closes the piazza, whose entrance door opens at the end of the main axis. Then, urban ornaments were added (first years of the XVIIth century), which all highlight the symmetry of the piazza. The statue of Ferdinando I is set along the main symmetry axis and the twin fountains are aligned on the cross axis that connects the middle arches of the two side porticoes. Piazza della Repubblica is the result of an authoritarian operation of total transformation, and testifies of the recent history of the city. The old market, together with the neighbouring constructions, was demolished, and a new urban space was designed, twice as big as the previous one, and was enclosed by modern buildings. A commemorative inscription celebrates the renovation of the city centre. The symmetry axis of the piazza is open, and extends towards West through a high arch. No urban furniture (ancient or recent – temporary or permanent) has ever been placed along this axis, so that the centre of the field of vision is always open, when the look follows its direction.

Piazza Pitti

Piazza Pitti is another example of rigorous geometrical order. The piazza is enclosed on three sides by the Pitti Palace and its side wings. Similarly to Piazza Santissima Annunziata, this order was strengthened at any stage of the historical transformations. A central symmetry axis involves both the monument and its connected open spaces: courtyard, garden and urban piazza. Some ancient etchings from the eighteenth and nineteenth centuries, enhancing the symmetry of the ensemble, show a central perspective of the whole piazza, with the palace front in the background. However, those are hypothetical vedute since no real spot allows such a visual perception of the urban space. No street opens in front of the palace along the middle axis, the piazza itself is too shallow and too wide. Therefore any possible view of the space is an angled view. The geometrical order was planned regardless of the actual possibility to visually perceive it from any existing viewpoint.

Piazza della Signoria, and the Cortile degli Uffizi.

Piazza Signoria is – and has been for many centuries – the core of Florence. It hosts the city secular administration. It is roughly L shaped, and the Late Renaissance courtyard of the Uffizi (even though very geometrical in itself) adds to irregularity of the urban space. The Piazza can be entered from nine different streets, and two additional paths bring to the Cortile degli Uffizi. Those many entrances produce nine different views of the Piazza, but not all of them have the same historical importance. We know that Brunelleschi chose Piazza della Signoria for his second experiment in perspective representation. He pictured the space as it could be viewed while coming from the actual via dei Calzaiuoli that connects the piazza with the cathedral. Many scholars have tried to reconstruct an outline of the original painting from the descriptions readable in Brunelleschi's major biographies. However interpretations vary according to the scholars, especially about the technique that Brunelleschi employed to draw his picture. Some argues that the painting was a "central" one-point perspective, other assert that it was a two-point perspective with all buildings seen obliquely.

Paintings depicting Piazza della Signoria are many. In two anonymous paintings commemorating the execution of Savonarola (from the end of the fifteenth century and mid sixteenth century) the Piazza is seen in central perspective, from a viewpoint located opposite to the front of Palazzo Vecchio, along the central axis of via dei Gondi. The eye level is much above the ground level, even though the picture is not quite a bird eye view. From this spot, the major East-West length of the urban space exten-

ds in front of the viewer, and the tiling of the piazza is divided into regular rectangles by an orthogonal grid to which all the surrounding buildings seem to be aligned. The depth of the Piazza has been excessively emphasized. The image produced is that of a stately Piazza, geometrically ordered, as the main Piazza of a city should be. Another view shows the piazza as it can be seen while entering from via delle Farine, with the façade of the Loggia dei Lanzi in the background. Here too reality has been distorted to suggest a geometrical order that puts the Loggia on the central North-South axis of the West half of the urban space. Artists depicting urban spaces have often attempted at re-ordering the subject of their paintings and drawings, presumably to make it look nicer and nobler.

However, the arrangement of monuments and ornaments that shape the piazza is definitely not geometrically ordered. The L shape, the true image of the urban space, is best seen from the spot that Brunelleschi chose for his painting. From this point, all the buildings and statues are displayed in the observer's field of vision, each showing a three quarter view. Preserving the image of the city also means preserving the historical "disorder" that has become part of the cultural heritage. Unfortunately the actual use of the Piazza tends to concentrate the visitors and citizens in the West part of the space, ignoring the East part that extends beyond the monument to Cosimo the First, which is today relegated to bicycles and taxi parking.

Notes:

[1]Vitruvius, *De Architectura*, Book VII, preface
[2]Erwin Panofsky, *Perspective as Symbolic Form*, transl. C. S. Wood, Zone Books, New York, 1997, p.43
[3]Le Corbusier, *Towards a new architecture*, ed. F. Etchells, Dover, New York 1986, p.52
[4]idem, p. 43
[5]The panel of Urbino is today attributed to Luciano Laurana (1420-1479), the Baltimore painting to Fra Carnevale (1420?–1484) and the Berlin painting to Piero della Francesca.
[6]Antonio di Tuccio Manetti and Giorgio Vasari

Bibliographic references:

Cesati Franco, *Le piazze di Firenze*, Newton e Compton, Roma, 1995

Choisy Auguste, *Histoire de l'Architecture*, Paris, 1899

Damisch Hubert, **L'origine della prospettiva**, transl. A. Ferraro, Guida, Napoli, 1992

Doxiadis C.A.: *Architectural Space in Ancient Greece*, trad. di J. Tyrwhitt, M.I.T. Press, 1972

Fanelli Giovanni, *Firenze*, Laterza, Bari, 2002

Fanelli Giovanni, *Firenze, architettura e città*, Mandragora, Firenze, 2002

Keuls Eva, *Plato and Greek Painting*, E.J. Brill, Leiden, 1978

Le Corbusier, *Towards a new architecture*, ed. F. Etchells, Dover, New York, 1986

Lynch Kevin, *The image of the city*, M.I.T. Press, 1960

Marchetti Luciano, Claudio Paolini, *Piazza de' Pitti*, Polistampa, Firenze, 2007

Mele Giampiero, *Architettura gotica e disegno urbano. La piazza e i fronti verso il centro antico*, in Bartoli Maria Teresa, Musso e non Quadro, Edifir, Firenze, 2007

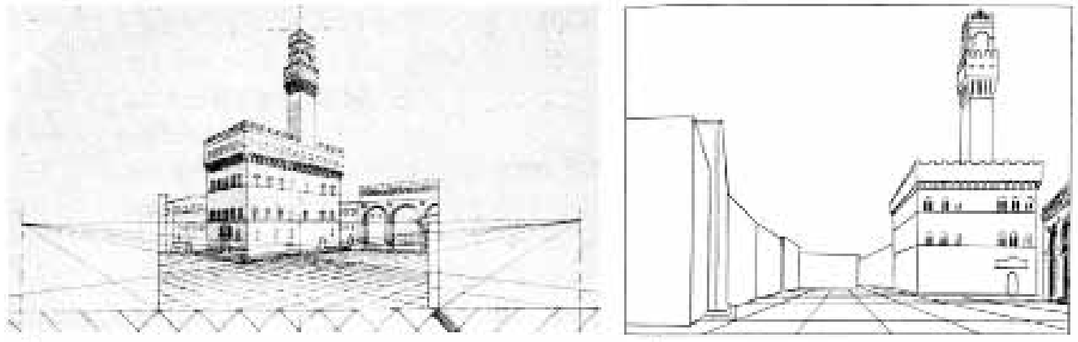
Nuti Lucia: *Ritratti di città*, Marsilio, Venezia, 1996

Panofsky Erwin: *Perspective as Symbolic Form*, transl. C. S. Wood, Zone Books, New York, 1997

Sitte Camillo, *L'arte di costruire le città: l'urbanistica secondo i suoi fondamenti artistici*, transl. R. Della Torre, Jaca Book, Milano, 1981

Perspectiva naturalis: the sacred precinct of Olympia, Greece (drawing by C.A. Doxiadis)

Perspectiva artificialis: The Ideal City (attributed to Fra Carnevale, ca. 1480-1484)



a) b)

Two reconstructions of Brunelleschi's second experiment on perspective drawing:
a) by Alessandro Parronchi, b) by Decio Gioseffi

Emilio Faroldi
Politecnico di Milano, Italy

The grammar of public space

Reclamation, functional restoration, redesign and urban reorganisation of Lorenzo Berzieri Square in Salsomaggiore Terme

The deep changes overwhelming the city go along with the infrastructure evolution and developments dictated by social habits and customs as to the use of urban spaces.
The relation among built environment-vehicle-pedestrian asks for new architectural thinking: new ways of interpreting the relational space and, consequently, new interventions.
Stimulating the practice of architectural project as a unique chance to turn 'urban discards' into a true resource for the city and the territory. The need of creating a sense of place and local identity in the processes of urban morphogenesis and reclaiming of urban settlements prompts the contemporary designer to constantly re-invent both the role and the contents of the square, mainly levering on the vocation of the square as a place for social aggregation and connection of road flows.

Regaining possession of the urban space becomes hence an issue being at the same time ethical and pragmatically necessary. As a matter of fact, the square as aggregation place is a constant of the urban history, the core of social, economic, and cultural development. As to the larger topic of post-modern city redefinition, the public space is currently looking for a new identity to be able to recover those meanings attributed to such space within the Italian cultural context in the past: urban archetype, aggregation space of the most significant social cores, geographical, organizational, and morphological centre of the city, crucial element of its natural module of growth and reading[1].

The morphological, functional, and organization features of outdoor spaces – which are not interpreted as negative traits of the urban fabric any more – still characterize the main projects on the transformation of the most important European urban systems: the square is assigned the role of amplifier of values and contradictions of an architecture that is not single-oriented any more, as to both morphology and functionality.

Formulating ideas on this topic means irradiation of organizing energy to the surrounding environment, therefore stimulation of the disappearing civic thinking, a prerequisite for the evolution of the urban landscape and its components. The hierarchical-structural role - which can be historically attributed to this type of space due to its ability in organizing both urban morphology and the main human activities – has been facing a period of strong crisis in modern times, also involving the new urban additions and, by model emulation, those spaces existing within the consolidated city as well[2].

Following a critical review of what has gone lost, a slow, constant recovery of the historical memory of the square has originated as central point for the reclamation of the existing city and of the project of the "new city".

The intervention programme points at a sustainable enhancement of the local territory meant both as a physical, natural environment and as a social context where the reorganization of the infrastructures and of the local services becomes of greatest importance.

In this sense, the only solution passes through a structural renewal of the urban facilities and thermal landscape and a new general approach which could be able to deal with the innovative demand faced by the sector.
The square, and the public space in general, in the wider context of post-modern city reconfiguration, are today in the quest for their own and new identities, by trying to recover the meanings that had been attached to them over the past within the Italian cultural context, that is the meaning of urban archetype, space for the gathering of the most significant social groups, geographical, organisational, morphological centre of the city, nodal element of its natural growth and reading module.

Working out ideas about the subject matter of squares means radiating an organizing energy all around, by thus favouring the spreading of the civic thought which is nowadays dying out, a fundamental condition for the evolution of the urban landscape and of its constituting parts.
The hierarchic-structural role, that can be historically attached to such a spatial typology for its ability in the organisation both of the urban morphology and of the main human activities, in the modern age started to experience a strong crisis involving the new urban additions and, by modelistic emulation, the spaces existing within the consolidated city.
The critical revisitation of what has got lost originated a slow, constant recovery of the historical memory of the square as central point for the renewal of the existing city and for the design of the "new city" [3].

The morphological, functional, and organisational traits of the open spaces, being no more interpreted as *negative* traits within the urban context, now come back to characterize the main transformation proposals for the most important European urban systems by attaching to the square a role of amplifier of the values and the contradictions of an architecture which is no more mono-oriented, both form the morphological and from the functional point of view.
Such an aspect urged the urban planners and the designers to approach the subject matter of the square, and more generally the open spaces of the city, through two attitudes being dichotomous among them. On the one hand a trend to diminish the thought concerning the open space by equalling it to a simplistic superficial maquillage through urban furniture, by achieving limited objectives; on the other hand, by confining the square to play the mere role of sorting out point, while letting the vehicle traffic flows play a totalizing role.

Repossessing the urban space, which nowadays turns out to be dominated by vehicles and means of transport, hence becomes not only an ethical but a pragmatically necessary issue.
In a time when the variable represented by environment is being concretely reassessed and renewed attention is focussed onto the safeguard and the valorisation of the cultural heritage, defining and rethinking the open space of the square does represent an important starting point for the design of a thorough urban and architectural renewal in the frame of wider strategies.
The project for Lorenzo Berzieri Square is based on the need gradually to redefine the spatial identity of previously run–down city areas and to enhance the uniqueness of the Terme Berzieri building, a masterpiece of Italian Liberty, that exerts an iconic presence on the urban fabric.

A succession of citations and references give life to a bold fusion of form and functional decor in harmony with the richness and majesty of the existing structures, accentuated and enhanced by the minimalist and essential character of the proposed works, totally in keeping with their history and dynamics [4].

The project of urban redevelopment for Salsomaggiore Terme aims at the definition of promotion strategies and valorisation of the thermal context, interpreted like identity cultural patrimony of local civilizations that recognize in its historical matrix and in its social value a civic tradition [5].

Through the analysis of the physical preexisting, and reading the composition principles of urban spaces as generators of urban form, the project is oriented to experiment instruments, methods and technologies for the valorisation of the public spaces, interpreted like assets to promote strategies of planning integrated for the fruition of the territory and its values.

Piazza Lorenzo Berzieri try to define a new urban identity, originated from general processes of cultural reformulation, modification of traditional needs and redefinition of the inherent offer by representative objects and iconic spaces of contemporaneity.
The design is based on the need to redefine a spatial identity being presently fragmented and unachieved, and meanwhile to respect and valorise the uniqueness of an object which is strongly imposing itself with iconic strength in the urban fabric by becoming one of its most important catalyst.

The project was born with the following aim: give back to Salsomaggiore Terme parts of the city which were depersonalized or, even worse, which discredited the true potentials of the city deriving from its location and historical legacy.

The Lorenzo Berzieri square is the heart of an action of urban renewal which finds, in its open spaces, a basic operating strategy aiming at giving back to the city the homogeneity it has lost over time.

Starting from such an assumption the Berzieri Spa Building takes on a protagonist role by becoming the fulcrum of a design aimed at returning to it a background, until yesterday hidden by the improper use of the bordering areas by both motor vehicle and pedestrian traffic, in order to extol its decorative and monumental values in a resumed dialogue with the other valuable architectural elements that are present in the square [6].

The historical image of the Berzieri Square is reaffirmed by relating the design to the existing fabric, by overlapping and redesigning those lines, now faded away, which belong to the historical development of the city and which, strengthened by the renewed concept of square, take on a new identity.

The identity of the places surrounding the Spa Building stems from the encounter between an object having its aim in itself and an old settlement already consolidated at the moment of its introduction.
This process hence originated secondary spaces, deprived of character and functional values, in which the greenery and the road played the role of healing the split resulting from this forced insertion.

The spaces surrounding the building become today an opportunity for renewal, by raising the qualitative level of their own usability and visibility.
The reorganization of the open spaces, through the recent pedestrianisation action, shifts the focus onto the tourists and the citizens. The organization of the square aims at returning space and environmental quality to the people and their relationship with the monument.
Such functions are strengthened by the design of urban elements of which it is made, aiming at increasing both the sociality and liveability of the place [7].

The square is interpreted through the triple experience of the pedestrian crossing, the minimum authorised motor vehicle traffic, and the pedestrian area. The design takes inspiration from these different typologies of public space usability by adopting solutions being suitable to the specificity of use.
The leading idea is that of a flexible space to live and use, at the same time, both as a whole and in its parts, related both to daily life and to exceptional occasions, a space in which individuals can feel themselves "contained" while being free to decide whether to stay or go.

The square is thought as a flexible space, being easily equipped with facilities depending on the events it will house. The design of the fixed furniture is conceived with a view to offering additional services for special events and represents the element that structures and orientates all the paths [8].
The attenuated rise which characterizes the intervention as a whole, both longitudinally and transversally, poses the problem of accessibility and usability of space by people with limited mobility. Hence crossing the square has been made easier by creating suitable planes with inclinations that can also be suitable for people using wheelchairs.

Consistently with the project lines, materials have been specially selected according to the use of space: in particular, the distinction between the true 'square' and the remaining fitted spaces achieved by two different types of pavement.
The project openly measures itself with the existing valuable elements, through a materic and chromatic dialogue, by stating its contemporaneity though in full respect of historical elements running through the place.

Quotes and references run after each other, to give birth to an explicit harmony between morphology and functional fitting and the pre-existing magnificence, which is highlighted and enhanced by the minimal and essential character of the intervention proposed while fully respecting the place history and dynamics.
The sign of the project is minimal, embodied by few essential elements: stone, green colour, water, and light. The selected stone materials are suitable to neutrally match the polychromy of the Berzieri palace, while metal materials of containment elements and furniture are in line with the local architecture.

The stone material is the element which most characterises the project: all of the spaces currently covered with an old and worn out bitumen layer, are now re-interpreted and paved with stone slabs, with a view to eliminating all steps between the sidewalk and the street.
Within the context of the project, the green colour is a linking element with the great green areas already existing inside the city. The project proposes an important implementation of green areas, be them lawns, areas fitted with green design and/or mosaic art.

The presence of water in the contemporary city is not an ephemeral element: it is an essential contribution of culture and enhancement of one of the most important natural resources for the birth and growth of peoples' civilization, an essential material able to represent one of the main symbols of the public spirit of the cities of the third millennium.

Hence water as unavoidable element of environmental infrastructure, as global essential tool for landscape architecture and urban renewal. In the most important postmodern cities, the use of water concerns the adoption of a collective strategy for the upgrading of the life's own element which founds the nature's very dynamics.

The introduction of a water mirror whose geometry hints at a grand piano – framing a spectacular heartwarming effect - recalls the thermal origins of the city and the presence of a river flowing under the square.
Water, an a-materic and a-geometrical element turned into architecture, is one of the drives of the European city renewal.
The project introduces modern illuminotechnical technologies in order to organize a 'light system' able to satisfy the basic issues of visibility and security of public spaces [9].

"Opera aperta fra Oriente e Occidente" (An open Work between East and West) is the title of the work by the artist Giorgio Milani, born in Piacenza, for the Lorenzo Berzieri Square.
The sculpture comprises a partition in corten steel and a bronze stele whose cast encompasses important details of the city of Salsomaggiore as well as the qualities of the city salsoiodic water.
Zoomorphic and phytomorphic details found in the stele make reference to the wonderful Berzieri Palace towards which the sculpture relates with fearful respect.

The bronze assemblage of printing types reads quotes of poets and writers who, in history, have got in contact with the city and have taken inspiration from the city: Bertolucci, D'Annunzio, and Montale, to mention but a few.

The qualifier 'open' attached to the name of the work declares the willingness of letting the work interpretation open to the sensitivity and culture of those looking at it; the work suggests concepts everyone can develop according to their own knowledge.
The East/West topic – a current one – is developed positively, as a reply to the Babel we are living at present.

On the eastern side of Palazzo Berzieri an assemblage of cement printing types is fitting, dialoguing with the square sculpture.
A place Georges Perec would have described with patience and humility: Place Saint Sulpice in Paris, 1974, sitting at a cafe table, just like the newly opened Lorenzo Berzieri Square in Salsomaggiore Terme.

Because a square is always an act of love towards the passing world, towards all of us who are passing by. And the new heart of Salsomaggiore is even the more so: the feeling of memory towards what flows.
Planning the city of memory creatively means overcoming the conflict between conservation, innovation and transformation with the purpose of providing the driving force for a complex system of – social, cultural and economic – global relationships having a strong local connation.

Emilio Faroldi
Politecnico di Milano, Italy

Notes

[1] The contemporary city appears to be fragmented into systems, fabrics and nodes, and several partial cities can be identified within it which may sometimes interact and other times be in conflict.

[2] The future of the urban economy depends on the ability of cities to condition the various forms and functions of planning to the dynamics of the implemented activities, so as to optimize their competitiveness and ability to interact with the context of the global space of flows: this becomes rooted in the physical space, but the on line and material experiences have their own, increasingly perceptible, characteristics.

[3] The so-called “attractive cities” start taking shape: these are the main advocates of the definition of new urban geographies within which the economy of culture can provide answers and opportunities to urban and architectural planning projects which, in their turn, have the task to redefine the places of sociality and workplaces.

[4] In the city, the “Architecture of Dialogue” represents the main topic, able to compose and order the principal activities of society. “Designing the city foundation through primary elements is, from my point of view, the one rational possible law” (Rossi 1966).

[5] To make use of the cultural resources of an area, also with the purpose of local development, action policies and strategies need to be deeply innovated, by integrating the process of enhancement of resources with that of the context, by giving the priority to integrated action plans rather than specific projects, by making it easier to benefit from all the economic effects of the enhancement process. In other words, it is necessary to introduce strategies based on a strong integration of the enhancement of all the cultural resources of the area with the local economic and social system.

[6] Residence, work, sport, leisure time, production and culture are interconnected within the urban space according to diversified time plans, bringing about the reduction of trips, energy saving, a limitation to pollution and promoting connections between parts of the city within an interacting system of communities able to express different interpretations of urban life as a response to the requirements of different contexts.

[7] The first characteristic for a place becoming a stop moment, distinguishing from the streets where the moving dominates, is the pedestrianization: “access, way, use, limited to people” (Favole 1995).

[8] Within this contest, the “new services”, innovative materials and application techniques, proposed by architecture today, prove to be stimulating and promising fields of actions.

[9] In this arena, the relationship between architecture, town planning, design, new technologies and materials borrowed for architectural purposes, takes shape as one of the great issues of our contemporary era.

Bibliography

Gregotti V., *Architettura e post metropoli*, Einaudi, Torino 2011.

Faroldi E. (a cura di), *L’architettura del dialogo. Piazza Lorenzo Berzieri a Salsomaggiore Terme*, Allemandi, Torino 2011.

Simmel G., *Le metropoli e la vita dello spirito*, Armando Editore, Roma 2010.

Aymonino A., Mosco V. P., *Spazi pubblici contemporanei. Architettura a volume zero*, Skira, Milano 2008.

Clement G., *Manifesto del Terzo paesaggio*, Quodlibet, Macerata 2005.

Faroldi E.,. Vettori M.P, *Dialoghi di Architettura*, Alinea Editrice, Firenze 2004 (I ed. 1995).

Espuelas F., *Il vuoto. Riflessioni sullo spazio in architettura*, C. Marinotti, Milano 2004.

Magnier A., Russo P., *Sociologia dei sistemi urbani,* Il Mulino, Bologna 2002.

Mattogno C. (a cura di), *Idee di spazio, lo spazio nelle idee. Metropoli contemporanee e spazi pubblici*, Franco Angeli, Milano 2002.
Faroldi E., *Città Architettura Tecnologia*, Edizioni Unicopli, Milano 2000.

Faroldi E., *L’acqua e la città. Il caso di Salsomaggiore Terme (The Water and the city. Salsomaggiore Terme case)*, in Maione U., Maione Lehto B., Monti R., *New Trends in Water and Environment Engineering for Safety and Life*, A.A. Balkema, Rotterdam 2000.

Favole P., *Piazze nell’architettura contemporanea*, F. Motta, Milano 1995.

Heidegger M., *L’arte e lo spazio,* Il Melangolo, Genova 1995.

Portoghesi P., *L’angelo della storia. Teorie e linguaggi dell’architettura*. Laterza, Roma-Bari 1982.

Benevolo L., *Storia della città*, Laterza, Roma-Bari 1976.

Rossi A., *L’architettura della città*, Marsilio, Padova 1966.

Images

General and detailed views of the project for the redevelopment of Piazza Lorenzo Berzieri in Salsomaggiore Terme, Parma, Italy.

Nadia Fava
University of Girona, Spain

Forgotten Project: Plan de la Ribera, 1964-1972, Barcelona

Introduction

The aim of this paper is to discuss the role of history not only as a tool for interpreting the past, or as a way of providing instrumental or theoretical tools for the profession, or even as a repertory of possible shapes or types, but as a cultural system of categories that can be used to discuss the present and future: a touchstone for understanding the present and the complexity and the multilayered contemporaneity reality.
A system rises from the friction between different parties, the conflictive aspect of reality and, using Manfredo Tafuri words, the "historiographical problem". The main point is that history could be useful to predict the future, but it is mostly a tool for understanding the present through categories emerging from the analysis.

The case study is a micro history on the utopian, imaginary or unbuilt projects of Barcelona's waterfront . ***The Plan especial de Ordenación de la zona Suroeste de Montjuich*** **(1964-1969) by the architect Antoni Bonet and with the collaboration of Oriol Bohigas and Josep Martorell, the Plan de la Ribera (1964-1972) and the Port project for a residential area (1965-6) by Antonio Bonet and the engineer Gonzales Isla, the port director** should had to construct the city façade (Fig.1).

Since the middle of the 19th century, when Barcelona's coast was converted into its industrial sector, losing its role as a representative part of city - as it had been so during the ancient regime -, the architects, recollecting the collective imaginary, began drawing other possible futures or destinies for its waterfront.

The Bonet's projects marked effective change on the imagination of the Barcelona coastline. They were the first unitary projects to treat the question of the image of the Barcelona waterfront in the appropriate urban scale and sections. The reconstruction of this micro history, its memories, the public discussions about the opportunity to improve this macro project, allows for an examination of the results of the actual construction of the Barcelona waterfront during the 1990s and the beginning of the 21st century and the new proposal for a new residential area in the city's port area and a yachts area .

The crisis of utopia: Bonet Castellana and the Plan de la Ribera

Antoni Bonet Castellana, (Barcelona, 1912-Barcelona, 1988) (AlVarez, 1996) was envolved in the catalan avanguardian generation parteciping in the GATCPAC grup (Catalan Technical Architects Group for the Advancement of Contemporary Architecture), in 1933, at the age of 21 was sailing Patris II on a trip from Marseilles to Athens attendin the IV CIAM, two yaers later he was working in the Le Corbusier office.
The return was not easy becuase of the spanisch political situation, and he decided to emigrate in South America.
He shared the destination of exile with much of the "intelligence" of Europe: the "shuttles" of modern avanguard architecture in America (Pizza, 1987, Alvarez, 2007, Fava, 2010).

In the mid-sixties, in the period of developmentalism, Bonet returned to Barcelona after 25 years absence to his native land, and advanced a projecte for his native city façade, in which he recolected the avanguard experience, south american experience and the post avanguard reflection. The project was a completely failure, did not reach the construction and it was a big waste of money and time, on the contrary to the transoceanic numerous successes.

Bonet Castellana embodies the generation of the utopian crisis and the Plan de la Ribera initiates a discussion of the multiple answers to the crisis of the vantgard in the sixties and the consequence of the ideology of (time and space) rupture that lasts till today.

In "Progetto and Utopia" Manferdo Tafuri (1973), reflecting on architectural vanguards, seems to state that the project is always utopian. It is always tragic, showing the divergence of political, economic and cultural interests to solve the diverse times present in the project – the past, present and future – and the impossibility of controlling the future (Purini, 2007).

Tafuri in "Progetto and Utopia" realized that the vanguard legacy would was dissipated in the construction of the event cities, the icon cities. These cities comply with the financial sector rules, with the culture of the event, improving the weight of the representation more than the contents, while architecture is losing its positive and constructive body, turning into decorative art. In the chapter "La crisi della utopia: le Corbusier ad Algeri" he described the Plan Obus as a project that "absorbs that variety, mediates the improbable with the certainty of the plan, makes up the organic and inorganic".

And, moreover, Tafuri insisted "the structure of the image, and only through it, the realm of necessity blends into the realm of freedom, although the former merges into the rigor of the plan and the second into the recovery of a higher human knowledge".

For Tafuri architectural history was no longer the point of departure for a progressive-constructive world view; instead it became the touchstone for the destructive-critical task of the intellectual, as has been stated by Hoekstra (2005).

Manfredo Tafuri, from the publication his book *Teoria e Storia dell'architettura* (1968) and continuing with *"Progetto e Utopia"* , struggled to establish architectural history as an independent and cultural subject within the humanities, based on the micro histories in which the content depends basically on the preoccupation on the present and personal interpretation.

He attempted to support the idea of architectural history as a specific, contextual, autonomous and chiefly contradictory discipline. The critical lecture of the Plan de la Ribera, using a similar tool of Plan Obus by Tafuri, seems to give us tools for judging between the unrealized Plan de la Ribera and the coastline of Barcelona.

Now there seems to be a general consensus about the failure of the Barcelona coastline: lacking a general scheme, too large a section, no clear hierarchy, without "necessity" and providing mostly poor discourse on the city's destiny.

The Necessity Realm:
The Grid and the Superblock

Barcelona loses the possibility of its contact with the sea from the end of the 19th century until the mid-20th century, as a consequence of the presence of the port, the industrialization of the entire coastal front, from the openings of sewage and storm drain openings to the sea and the spontaneous housing encampments on the beaches. In spite of the fact that the importance of the maritime front is reclaimed during the 19th and 20th century, it's only until the 1960s that two projects are drawn up, which had they been fulfilled, would have "colonized" the entire coast along Barcelona with "residential buildings" and drawn the façade of the city towards the sea.

The two projects in question (Fava, 2004) (Fig.1, Fig.2), promoted basically by the private sector within the legal boundaries of the Regional Plan of 1953, are the Special Organization Plan of the Southwest Zone of Montjuic (1964-1969), carried out by the architect Antoni Bonet (1913-1989), with the participation of Oriol Bohigas (1925-) and Josep Martorell (1925-); and the Ribera Plan (1964-1972) by Antoni Bonet (Bonet, 1965). In the second project Bonet and the port director the engineer Gonzales draws up a plan specifically for the port (1965-1966) with the objective of reconverting the zone into a residential neighbourhood (Fig.3).

These two projects, together with the General Port Plan (1964-1966), the Interconnecting Railway Plan (1966), the Barcelona Metro Plan (1966), and the proposal by the MOP *(Ministerio de Obras Públicas* or Ministry of Public Works) of a coastal throughway, give rise to a reflection about the circumstances that caused such an interest for the maritime front in the mid 1960s.

The "Special Organization Plan of the Southwest Zone of Montjuic" and the "Ribera Plan", interconnected with the future throughway projected by the MOP, proposed the construction of two neighbourhoods characterized by a high density of residential buildings which would have solved the problems of congestion in Barcelona's historic center, maintaining the density of the traditional Mediterranean cities. These projects would have contrasted with Barcelona's processes of development in a centrifugal direction, especially toward the mountains, through a strategy of equilibrium that would have given more emphasis on the coastal façade.

While the first of these projects consisted of a group of residential buildings for 18,000 persons, called "Miramar" and located along Montjuic's southern slope, the second project would have occupied a wide strip of 500 meters by 6 kilometres between the Ciutadella Park and the Besos River, where 180.000 people could have lived.

The port project, which was never officially presented, included in the port itself residential buildings, commercial sites, as well as six skyscrapers in memory of the three represented in the Macià Plan (1934) (Fig.4) by GATCPAC, with the collaboration of Le Corbusier . The Bonet and GATCPAC projects, both are made from an aerial vision, from a far away cultural perspective .

Meanwhile the Ribera Plan , on the East cost, in its purest version of 1965, is drawn as a 500×500 meter module (the equivalent of 4 Cerdà blocks) These are repeated seven times without any deformation of pre-existent areas or structures, as would be the case of the presence of the Eastern Cemetery or the consolidated urban structure of Poble Nou.

These *superblocks*, that recall the 400X400 meters Plan Macià superblocks, which constitute the module of the urban plan, are developed over a structure which constitutes an artificial ground installed six meters above the natural terrain, so that the structures acquire a favorable position facing the Mediterranean Sea, obtaining in this manner the independence of the pedestrian and automobiles movements. However, part of this artificial terrain is omitted, in the center of the *superblock*, to create a central park for each module, proposing in this manner the connection of public and private spaces.

Three different types of residential, skyscrapers, blocks and cross-shaped buildings are placed on top of this large platform, including commercial spaces and recreational services for the neighborhood, while in the two underground levels there is space for parking and storage. In this way, because of its surface area and density, each sector becomes an autonomous element where all of man's basic activities can be accomplished (Fig.5, 6).

The utilization of a rigid structure, a grid or diagram in the current architectural language, as "Laying down a grid should be mapping of the possible, not restrain order" (Balmond, 2002), has been the architectural response to different aspects of the society of the 1960s.
Tafuri explained the same with the phrase "the realm of necessity blends into the realm of freedom"(Tafuri, 1973).

At that time the fundamentally negative critique on these was based on a judgement of a simple product of a speculative will, on behalf of private investors.

A critical analysis of the Ribera Plan was published in a 1974 (Solà Morales, 1974) book, "Barcelona, Capitalist Remodeling or Urban Development in the Eastern Ribera", caused by the criticism made by neighbourhood groups and various professional groups, and the spread of a "Ribera Counterplan" (Solà, 1974). These books note that "the Ribera Plan is the first important case which marks the introduction in Spanish urban planning of a process whose social and technical resonance in an advanced capitalist country has been employed extensively (in the intensive polemic of American 'Urban renewal' of the 1960s or the French 'Renovation urbaine')", a process defined as a large/scale private/sector urban remodelling.

The large scale, the population density, the functional and typological integration, an intermediate scale of the project and the emphasis of the project as a strategy which compromises the entire structure of the city (Solà Morales. 1990), appear to be some of the characteristics for which these plans may be considered "urban plans" and as urban, complex and interdependent pieces in their content, surpassing in this manner the monofunctional nature of zoning.

But not only, using the Marco Birago (2009) words about the Mafredo Tafuri history of the crisi of the plan de la Ribera seems to reveals as a great architectural work, … in idealistic terms, a Masterpiece is precisely that event which upsets the old order. This ….is the hallmark of great architectural events:…the ability to break down those balances that seemed to be established, and thanks to that extraordinary restarting of the game.

It's worth remembering that, coincidentally, the year when these plans were being drawn up was described by Reyner Banham (Banham, 1976) (1922-1988) as "1964, the mega-year", because Fumiko Maki (1928) utilized for the first time the term megastructure as *a large structure in which all or a part of the functions of a city could be carried out*. The definition ignores the mechanical aspects and the relationship between the structure and its components –modules– which characterize part of what has been defined as the megastructural experience, where the structure is characterized as being a rigid network in which the module can assume different compositions with respect to specific needs, without compromising the overall structure.

It's worth noting that the long-term administrative process of the Barcelona coastal project, from 1965 to 1972, caused by a large amount of signed objections, caused a series of variations which, in this sense the most notable are the variations of the module with respect to the pre-existent urban structures. There is a specific, local attention incorporated into the project, to the previous territory which the network attempted to recover only based on the strictest human and not citizens' necessities, which is reflected by the specific identity spaces, which have been constructed throughout time. The signs, symbols of the territory, remain as places for civic demands and not only for showing the symbol of the financial power.

The Realm of Freedom:
Complexity and Neighbourhood Dynamic

If the first version of the project belongs basically to the realm of geometrical necessity, the following versions were more receptive to the complexity of the social and urban context.

In the memoirs of the Ribera Plan there is an description about how the plan attempted to construct a space where man would have the maximum possibility of development and individual liberty within an organized collective, through his active participation. As a means of accomplishing this result a direct relation with the housing is proposed, with the extensions of the habitat, the recuperation of the urban floor for man, who *can have access to all the possibilities within the basic citizens' functions* (Bonet, 1969) .

The proposals for Barcelona's maritime front would have constructed neighbourhoods which would attempt to clarify the urban scale with the landscape. On one hand they are separated from the city thanks to its own zero level, different from that which is destined for construction within Barcelona, and on the other hand they reflect the presence of the natural environment in contrast with metropolitan dynamics.

The structure and the objective of the Ribera Plan and the project Montjuic looked after to the megastructuralist experience, while the project Montjuic principles refer to the objectives for urban planning suggested by Kevin Lynch (Lynch,1960) (1918-1984) in his studies about the "urban form" (Fig. 6,7). This author argues that among the aims of urban planning one must contemplate the recuperation of the city in its complex form as a place for familiarization, through a metropolis which is dense spatially and with paths which are socially planned, with the goal of the intellectual and moral development of people. As a result public meeting spaces which facilitate collective neighbourhood participation and strengthen the sense of community have an important role in his proposal.

The Special Organization Plan of the Southwest Zone of Montjuic in fact foresees the transformation of the cliff which fa-

ces the sea into a residential zone which will be transformed into a large citizens' balcony over the Mediterranean and will cause an overflow of life for the large Montjuic Park, in contact with the historic and cultural center of the city, avoiding the formation of peripheral neighbourhoods and providing homes for the people who lived in barracks along Montjuic's slopes.

The architects of the "Miramar" ("Seaside View") Project explain how their composition is consciously on a landscape scale, and that it is not valid to accuse the project of giving the mountain a new "*unnatural profile or silhouette" as if the unnatural were an unquestionable defect of any landscape. The only prestigious Barcelonan profiles are those that are unnatural, that is, those created with an intervention of urban and architectonic elements: Montjuic, in its southeast slope, with the castle, the National Palace, and the Tibidabo with the set of constructions at its peak* (Bonet, Bohigas, Martorell, 1967).

It isn't necessary, either, to add that the majority of historic cities (Rome, Florence, Vienna, etc.) owe their characteristic profile to historical and artificial landmarks which have specifically marked a brilliant moment in their architectonic evolution (Bonet, Bohigas, Martorell, 1967).

They foresee three towers at the summit of the mountain, with the purpose of contrasting the horizontal mass of the Castle, and on the southern slope the location of staggered residential structures with gardens which constitute the landscape transition between the inferior mass and the castle's profile.

A strong density is proposed, an artificiality in contrast with the mass of the mountain. This is a large-scale project which relates with and dialogues with the landscape, with the local geography, and which aspires to create a human-scale environment which could fit into the "geomorphological options" thought out by Sybil Moholy Nagy (Moholy Nagy, 1968).

Conclusion: Barcelona's Waterfront today?

Bonet wished to have the figurative control, an unitary image, from the sea in the Montjuic Project as well as in the Ribera Project (Fava, 2004).

In the sketches and scale models for the port project, which have never been officially incorporated into the Ribera Project, there are six skyscrapers that would overpass the seaside façade. The theme of skyscrapers, symbol of both the civic –the renaissance tower– and the economic power of the city, is repeated in the official proposal. Bonet projects three gigantic 84 meter tall towers in the form of a Y right in front of the Ciutadella Park, which are then repeated twice for each *superblock*, along toward the Besos River, creating a serial and almost minimalist profile for Barcelona.

The control of Barcelona's maritime façade, if exercised according to the proposals made in the 1960s, would have created a consistent image overall, with quantity as a value, and on the eastern side a serial image, related to mass production, both of which are key terms in Fordist production. However, the administrative mechanisms, together with the negotiation *between public and private interests*, the semi-privatization of collective spaces, the figurative control of the entire superblock as a theme park and the figurative control of the presentation (postcard) image of the city as the primary promotion of the project, already announce the city's current development model.

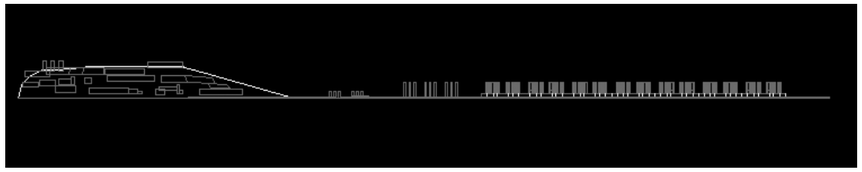
Currently, Barcelona, as many other cities of the western world, (Buchanan , 1992, Marshall , 2044, Ingrosso, 2011) is a city in which the local and international references disappear in an ever more heterogeneous context, mixed and extremely fluid. After more than four years of deep economic, social and political crisis, with macroeconomic parameters it is difficult to understand the new projects for the Barcelona port – luxury yacht ports and new residential buildings – that once again think about the city only in terms of economics and image.
The currently Barcelona maritime façade brings together some of the aspects described above but the lack of hierarchy, rupture, and image made Josep Fuses (2010) wonder how the bourgeois city was able to build an "radical" expansion , while in the post-industrial age it is shown its impotence in defining the waterfront?

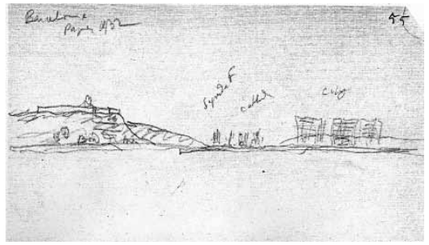
Bibliography

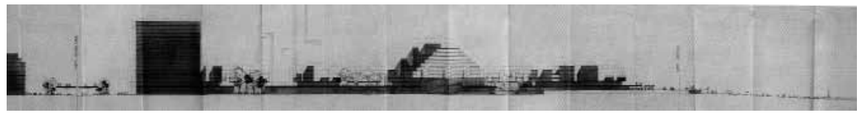
Álvarez. F., *Antoni Bonet Castellana, 1913- 1989*, Ministerio de Fomento, Madrid, 1996.
Álvarez F., *El exilio español en el cono sur*, in Aa.Vv., *Arquitectura deplazada, arquitectura del exilio español*, Ministerio de Vivienda, Madrid 2007.
Balmond C., *Informal*, Prestel, 2002.
Banham R., *Megaestructuras, futuro urbano del pasado reciente*, G. Gili, Barcelona, 2000. (1976).
Biraghi M., *Tafuri e la crisi, spiegati agli studenti del primo anno*, in Manfredo Tafuri, *Oltre la storia*, Clean, Napoli, 2009.
Bonet A., *Barcelona, una ciutat que no pot seguir vivint d'esquena al mar*, Costa-Padrò, Barcelona, 1965
Bonet A., Bohigas O., Martorell J. M., *Comentario al informe del Servicio Comarcal de Parque y Jardines*, 21-04-1967. A.A.
Bonet, A., Plan de la Ribera, Barcelona , 1969. (A.M.A. Gestion urbanistica, arxiu. 18354, registre, 1370).
Buchanan, P., *Modernidad con memoria: el espectáculo de la regeneración barcelonesa*, in A & V Monografias de Arquitectura y Vivienda, 37, 12-17.,1992.
Fava N., *Progetti e processi in conflitto: la facciata marittima di Barcellona.* Universitat Politècnica de Catalunya, Barcelona (ESP), 2004.
Fava N., *Extraneidad en la arquitectura de Antoni Bonet Castellana, in VII Congreso Internacional de Arquitectura. Viajes en la Transición de la Arquitectura Española hacia la Modernidad*, Pamplona – Navarra (ESP), 2010.
Fuses J., Arquitectura de la realitat, PhD dissertation, Universitat Politecnica de Catalunya, Barcelona, 2010.
Hoekstra T. R., *Building versus Bildung. Manfredo Tafuri and the construction of a historical discipline*, Ph.d. dissertation, Groningen, University of Groningen, 2005.
Ingrosso C., *Barcellona, architettura, città e società.1975-2015*, Skira, Milano, 2011.
Lynch K, *L'immagine della città*, Marsilio Editori, Padova, 1985 (1960).
Marshall, T. (Ed.), *Trasforming Barcelona*, Routledge, London and New York, 2004.
Moholy Nagy S., *Urbanismo y sociedad*, Editorial Blume, Barcelona, 1970 .
Pizza A., *El viatge*, in "Quaderns", n.174, 1987.
Purini F., *Un romanzo di idée*, in Progetto e utopia, Editori Laterza, Bari, 2007 .
Solà Morales M., Busquets J., Domingo M., Font A., *Barcelona, remodelación capitalista o desarrollo urbano en el sector de la Ribera Oriental*, G. Gili, Barcelona, 1974.
Solà Morales, M., *Another Modern Tradition*, in Lotus International, n. 64, 1990.
Tafuri M., *Progetto e utopia*, Editori Laterza, Bari, (1973) 2007.
Tafuri M., *Teorie e storie dell'architettura*, Editori Laterza, Bari, 1968.

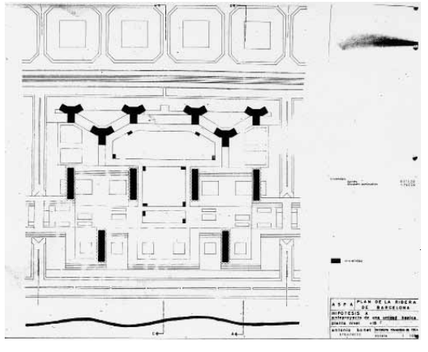
Legenda:

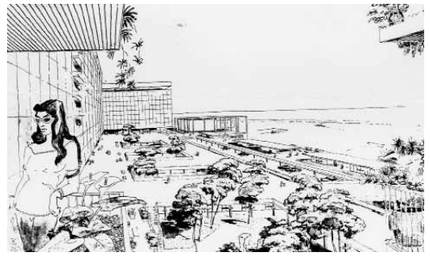
Fig.1- Photomontage by the author - Special Organization Plan of the Southwest Zone of Montjuic, 1964-69 and Ribera Plan, 1964-72
Fig.2- Sketch of the façade by the author, Special Organization Plan of the Southwest Zone of Montjuic, 1964-69 and Ribera Plan, 1964-72
Fig.3- Bonet Castellana, Gonzales Isla, Port project, Barcelona, 1964
Fig.4- Le Corbusier Sketch for Barcelona, 1934
Fig.5- Bonet Castellana, Plan de la Ribera, Barcelona, 1964
Fig.6- Bonet Castellana, Plan de la Ribera, Barcelona, 1972
Fig. 7- Antoni Bonet, Oriol Bohigas, Josep Martorell, studio sketch, Special Organization Plan of the Southwest Zone of Montjuic, 1964-69
Fig. 8- Antoni Bonet, Oriol Bohigas, Josep Martorell, studio sketch, Special Organization Plan of the Southwest Zone of Montjuic, 1964-69

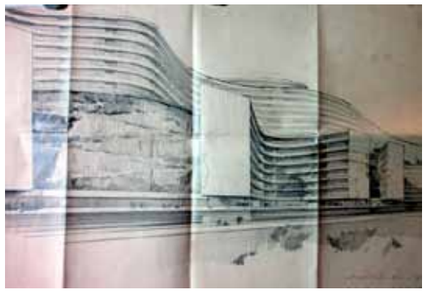












Luisa Ferro
Politecnico di Milano, Italy

Archaeology and Architectural Design: projects for Alexandria (Egypt) and Alexandria in Aria-Herat (Afghanistan)

Archaeology and Architectural Design[1]

We try to trace what returns from the ground: the former was constructed so that the parts functioned properly, with only the necessary accessories and their placement area, nothing was out of place even when expressed with apparent randomness. A set which is multiple without disorder: temples, statues, gardens, columns, capitals, regulated and open spaces. Then there was also a substantial component: the Providence, the wisdom that is to maximize the potential of a place (Strabo, *Geography*). So the architectural types (figures travelling throughout the Mediterranean and the East) were arranged and combined according to rules made directly to the place where they had to rise, the figures entered in the cycle of metamorphosis and fed the contemporary, keeping within itself the formal character of the matrices from which they came, matrices that live deeper in the folds of the collective consciousness.
What gives us archaeology is a complex mechanism in which design is seen immortal intelligence. Start from this is to discover the laws of things, knowing "the spirit that comes out of places" (Aristophanes, *The Clouds*).
But mind you the contemporary design is neither nostalgic nor reconstruction, because of performing arts of antiquity there are traces of a life that once was full. Too much wealth of phenomena and original atmosphere has vanished with the collapse of time. The ruins are part of a whole that no longer exists.
Ruins and fragments open up for us new possibilities and the architectural project is not the reconstruction of something lost, is (again) its metamorphosis.
The project brings together the fragments, builds relationships unimagined, governs the objects according to a lyrical scansion, a wavelength of composition. Generates new rules, measuring things with the same number using an ancient discipline: rigor tempered by the imagination that creates juxtapositions apparently unheard. Returns, finally, the real meaning of belonging to another reality, unknown, but belonging to the origin of ideas in architecture and with whom it would seem necessary to innovate, confront again.

Archaeology and Urban project

The excavation is no longer avoidable, it is one way to know of modernity, however, it can feel like a run, an obstacle in everyday life and in the construction of the city. But how is it possible to devise new strategies of cross-protection, enhancement and use of archaeological sites and what can be a good way to organize the results of the search for physical traces of history in the urban centres.
In the recent works of refurbishment of archaeological sites is often revealed a broad program of excavations, through which the sites are hit by a process of transformation without the project.
The objective of intertwining the point of view of archaeology with that of architecture is taken as a grounds for investigating the theme of a project conception in its relationship with the stratification of the city, considered as a field for research of a profound and hidden order of things and forms.
Rather than be an obstacle, archaeological remains provide an excellent opportunity for developing a coherent project design, especially in urban contexts: archaeological excavations rediscover artefacts and ancient contexts that re-emerge as "new" components for the architectural project.
The problem of protecting the historical and natural landscape from the present uncontrolled urbanisation is an urgent one.
In forecasting a future development for Ancient towns (both Alexandria and Herat) and its surrounding area, presents difficulties that arise in assigning a role to archaeological sites can be met with a project for an itinerary covering the city's museums. Posing the question in this way, the aim of such a project would be to recreate a hidden compositional unity, following open air museum itineraries, thereby restoring significance to single finds severed, until now, from an earlier and more complex context to which they once belonged.
As in excavation, the project isolates single objects from their context layer by layer, restoring its renewed significance, immanence of the antique being thereby embodied within the reality of the project. Following this line of thoughts, the aim of this specific project is to envisage an "archaeological promenade" following a sequence of ruins and monuments at present detached from a context to which they originally belonged, re-arranging them to enhance their significance.
Further, the chosen places of significance constitute the key points of the urban plan worked out on a metropolitan multidisciplinary museum-school itinerary able to express the structural features of places. As semplified by Alexandria Museum, the word "museum" thus came to mean a place devoted to study and learning.
Following are introduced two recent and on-going experiences carried out in prominent archaeological places of towns founded by Alexander the Great (Egypt, Afghanistan). There the museum-itineraries follow the matrix route of foundation and as in great *collage* - there are excavations, ruins, the archaeological finds. There are also the fragments of townscape, theories of art and ideas of architecture, modern contemporary projects.

Alexandria Egypt[2]

Alexander the Great founded Alexandria in 331 BC. Examining the topography of the city today allows the identification of the essential elements of the original urban system, and shows that the choice of the site was mainly due to religious and symbolic reasons. As a matter of fact Alexandria was the prototype of a series of Hellenistic towns designed as "king's towns" aiming to make the divine power of their founder explicit.

Original morphological urban matrix

The foundation of Alexandria can be set as the apex of such debates, as well as the beginning of a series of new towns, the ones of the Seleucids. The city becomes an explicit representation of the power of its divine founder, the rigorous order of its plan being a reflection of the "cosmic" order, in compliance with the "orthogonal grid" principles. The orthogonal grid of Alexandria can still be perceived, and forms the basis for an ongoing project of reassessment of antiquities into a coherent architectural scheme of fruition (Ferro and Pallini 2008, Torricelli 2010a, 2010b). The town was wholly designed from the very beginning in all its details, with a relatively huge perimeter, and was divided into five areas named after the first five letters of the Greek alphabet. The original matrix *route* was conceived on the basis of a longitudinal axis, later called *Canopic Road*; the most important transverse axis was a dyke (*Eptastadion*) connecting the mainland with the isle of Pharos. The Canopic Road played the role of an "extended centre", a wide, longitudinal open space, with the main buildings distributed along it, thus avoiding the idea of a "central point" as the focus of the urban plan. The first to put in evidence such a "longitudinal" character in the original project of Alexandria was 19th century astronomer Mahmud Bey Al-Falaki (1861). Later excavations along the modern street showed that the Canopic Road was actually deeply etched in the rock subsoil. The axis is thus a peculiar characteristic, a sort of icon in the foundation of the city, and as such it is an independent architectural unity (Mumford 1967, Caruso 1993, Ferro 2010). It will be repeated in later town projects and, in particular, in the design of Seleucia on the Tigris, as we shall see in further details later on.
In detail in the ancient urban plan public functions were located along the longitudinal sides of the great street, creating a sort of revision that emphasized polycentric patterns of the school of Rhodes: the development of a continuous linear matrix route, the great *plateia*, which because of its polycentric concept linked the eastern and western areas, port facilities, the agorai with the way of commercial traffic into the Nile, and on this geometry will set the forms and spaces to suit many needs.
In the Romance of Alexander the facts of Greek *Neapolis* was a topographic name joint to another, *Mausoleum*, which brings us back to the eastern region, the region opposite to that which was part of the old *Rhakotis*. The newcomers, the world Macedonian royal palaces, the tomb of Alexander, the famous Mouseion were in the east. The colony of Jews had its own district, at the Royal Palaces. In contrast Rhakoti, the old, renovated and enlarged by Ptolemy I, the seat of the *Serapeum*, the stations of the ships, the port town.

Two Historical-archaeological itineraries in the area of Museion and of Serapeum

Following the original meta-project and the morphological matrices, in the footsteps of several cities layered project is hinged on the two historical-archaeological routes (almost perpendicular to each other), referring to what is still readable, or evidenced by archaeological excavations, according to the current state of the art.

The first promenade takes in the face of imperial district, the Museum, the Library (Mausoleum), and the Canopic street named in the eastern section. Involved in the itinerary are the Greek-Roman Museum (founded by Giuseppe Botti in 1892), the National Museum of Alexandria, the great new Bibliotheca Alexandrina, the defined urban park in the footsteps of nineteenth-century Arab walls and fortifications.
In this context, in the Roman cemeteries, and finally there is the design of the Mosaic Museum (as indicated by the last administration requirements Alexandrian). The city's new museum is a unique, but at the same time studies require urgent and effective. Despite the dating evaluated by the Italian Evaristo Breccia around the third century BC, this place, as indeed most of the finds of the ancient capital, risks the gradual destruction. Also is the mirror of society Alexandrian, its communities, which have contributed to the construction of the modern and cosmopolitan Alexandria. Here are two fascinating archaeological findings: the so-called Tomb of alabaster and the Hellenistic Temple of Ras el-Soda.
Following in sequence – from east to west along the Canopic route – the projects for: the new Building of Centre d'Etudes Alexandrines CeAlex inside the rampart (fragment of the old fortifications) at Challalat Gardens, the new Archaeological Museum of Excavation site in Kom-el-Dik, the modern Caravanserai at Cairo Station.

The second promenade is the one that ideally connects the seaports, the canal and lake port as in the legacy system. It is divided from the isthmus *Eptastadio*, through the medieval city of Turkey and by cutting perpendicular to the longitudinal great route, arrives in the neighborhood of *Rhakotis* and ends on the hill of the *Serapeum*, the first typology cloistered. In the latter part of the route, the project aims to enhance and promote the excavations at the enclosure of the temple, which remains the only visible monument called "the pillar of Pompey" ("Column of the pillars" according to the Arabic name), noted by travellers when they landed at Alexandria from the canal of the Nile. But the great stairway, imposing artificial terrace that accelerated the visionary perspective of the vast quadrangular enclosure does not recognize anything. From the descriptions of Rufino of Aquileia in the vast enclosure of the *Serapeum* at the bottom there was a vaulted basement, above a suspended floor with exedra whose corners were occupied, among other things, the reading rooms of the Library "daughter." Inside the temples and shrines of Serapis, Isis, and Harpocrates Ptolemaic great mausoleum with its underground passages. And finally the Nilometer (only example known in urban Egypt), instrument for measuring the flood of the Nile and control the flow of water to tanks in the city. All these parts, belonging to a place of worship and study separate from the world, but adjacent to it, all these parts, although relevant, investigated and documented by archaeologists, they have completely lost their character and recognition. The project for the area of Serapum will include the Museum of water, a library archive/exposition of archaeological fragments, rehabilitation of the whole archaeological enclosure.

Herat (alias Alexandria in Aria)[3]

Morphological urban matrix

The basic principle of the new towns by Alexander the Great and his successors (the Seleucids in particular) and the new cities that differ from those earlier Greek (erroneously identified as *milesian*, but rather different in some fundamental aspects) is the construction of a single longitudinal axis origin of which the whole system of functional and spatial subdivision provided the foundation project.
In the repetition of standardized units of *Gran Via* - the longitudinal original matrix route - becomes supreme act of the foundation and an autonomous architecture. The place of aesthetic effects combined between buildings and landscape.
In the East the Afghan cities founded by Alexander in their original morphology assume a symbolic aspect that adapts to the Buddhist culture rooted in place for some time. It is known that Alexander was the first to promote the emergence of cosmopolitan cities and are carriers of convergent traditions: Hellenism from the west, Buddhism from the east.
So foundation matrix route no longer represents symbolically the founder, but the diagram of the universal order, the particular cosmography that represent Afghanistan as the end of the World.
Herat, as well as Alexandria in Arachosia (Kandahar), Alexandria in the Caucasus (Begram), Alexandria in Bactria (Balkh in the Hellenistic re-founding) are built on an north-south orientation matrix axis. This axis as the *Canopic* route of Alexandria in Egypt is the *plateia* of the city along which stand public buildings.
The legend of Alexander is sent in the Qur'an. And so during the Fifteenth-century Timurid empire, the new capital Herat is redrawn in the myth of Alexander. The urban design reinterprets the Hellenistic foundation assuming the shape which is still recognizable (and largely unchanged in the existing urban morphology of the old city). The squared general plan (about 2kmx2km) is characterized by a north-south matrix axis through the walled city which connects with the monumental outdoor areas (Timurid Musallas and Madrasa) and the famous gardens of delights described by Babur the last Timurid king and the founder of the Empire of India. A secondary axis perpendicular cuts in the geometric centre of the city's main axis dividing the urban fabric into four quadrants.

The Historical-archaeological promenade and the site for a new project: the Hussein Bayqara minarets

In the general context of rebuilding the devastated country, the salvation and the preservation of its cultural heritage is one of the tasks which international community must be faced. Along the main ancient axis (N-S) starting from the cisterns, the citadel the old fort and the area of the Timurid Musallas the project creates an urban archaeological itinerary, a sort of built itinerary where the works of arts could dialogue with the architecture, both inside and out: the culture and typology of architecture and of settlement itself are necessary and specifically involved.
This main route axis becomes an open air museum promenade to be considered as an engine for a future general plan of development and restoration of the city, but also to be understood as a itinerary of culture, in a larger meaning as well as in Alexandria (Egypt).

The milestones of the promenade: the domed cisterns, the larger ones which stand near the crossing of the two matrix routes; the immense fortress-palace of Qal'a-i Ikhtiyaruddin standing on an artificial mound, probably incorporating earlier archaeological remains, covered by fired brick glacis. Following the Unesco project report (by architect Andrea Bruno) the lower buildings restored could become Herat Archaeological Museum. Outside the ancient city walls the large artificial mound known as Kuhandazh, which probably represents the (never excavated) remains of the pre-thirteenth century city. On top are two monumental Timurid Shrines. The promenade comes to an end at one of most astonishing landscapes: the famous minarets of Herat. The very fragmentary remains of the Musalla and Gohar Shad and Hussein Baiqara complexes have been part of the three elaborate ensembles once described as one of the most magnificent architectural buildings of Islamic world; all deliberately destroyed by English army in XIX century and further damaged by recent fighting.

The project, therefore, from a full concept of cultural heritage, wants to build an integrated system of places and paths capable of detecting hidden forms of settlement and landscape and offer potential alternatives to the architecture. Morphological characteristics of the area, water availability over time have allowed the spread of crops and gardens of delight, to be supported and regained.
The museum tour-landscaped and re-unification of archaeological sites (new excavation areas) is built through a structured path that restores the visual relationship between the heights, creating new relationships between the archaeological sites and cities along a route that follows the old matrix route, the supreme act of the Hellenistic foundation.
The research introduced aims to elaborate an architectural design for the Gohar Shad archaeological Park and for a new building complex around the Hussein Baiqara minarets: library (in connection with Bibliotheca Alexandrina), centre for the de-

velopment of handicrafts, the girls' school of arts and crafts, the palace of brotherhood and tolerance.
This area have not yet investigated is presented as a vast and fascinating stretch of land from which emerge ancient fragments and traces of the large enclosures.
The new school will evoke the Iwan, the monumental entrance to the enclosure Timurid complex.
Along the promenade lined gardens will repair from a merciless summer sun, creating shadows and infusing the *mezzaombra* characterizing the performance of legendary landscapes, surrounding the visitors in the magic of myth. In excursions en *plein air* views are never natural, immediacy and linearity of the tracks is a function of memory. What we glimpse again, what has impressed in the form of the place and reappears through the project, open angles, opens scenarios, create relationships between differences and does belong to the same view.

Didascalia

Above *Alexandria in Aria* (Herat, Afghanistan). *The archaeological Promenade*. The plate based on the present map gives emphasis to the structure of the ancient *forma urbis* still identifiable in the city today, to parts of the city still morphologically consistent with the ancient strata, the archaeological areas, the Timurid walls and Monuments: along the main ancient axis (N-S) starting from the cisterns, the citadel the old fort and the area of the Timurid Musallas. This main route axis becomes an open air museum promenade to be considered as an engine for a future general plan of development and restoration of the city, but also to be understood as a itinerary of culture.
Emphasis is also given to site of the project: 1 and 2. Gohar Shad archaeological Park; 3. new building complex around the Hussein Baiqara minarets: library, centre for the development of handicrafts, the girls' school of arts and crafts, palace of brotherhood and tolerance.
Team project: proff. L. Ferro, S. Casolo with the Architects E. Ciapparelli, V. Bertini, Students V. Cattaneo, A. Citterio, J. Porro, E. Lepori, A. Nassivera, M. Tettamanti.

Below *Alexandria* (Egypt). *Excavation, traces and metaphores of the project*. The plate based on the present map gives emphasis to the structure of the ancient *forma urbis* still identifiable in the city today, to parts of the city still morphologically consistent with the ancient strata, the archaeological areas, traces of arab walls, the contour line that presumably marked the boundaries of ancient city and the island of Pharos and to the new projects:
1.Mosaic Museum at the Ancient Cemetery called "Terra Santa" (here the so-called Tomb of alabaster and the Hellenistic Temple of Ras el-Soda); 2. the new Building of Centre d'Etudes Alexandrines CeAlex inside the rampart (fragment of the old fortifications) at Challalat Gardens; 3. the new Archaeological Museum of Excavation site in Kom-el-Dik, the modern Caravanserai at Cairo Station.
Team project: proff. L. Ferro, A. Torricelli with the Architects E. Ciapparelli, V. Bertini. Students: E. Leguti, M. Maggi, C. Escobar, M. Lunghi, G. Tartarotti, A. Mantoan, S. Pin, F. Adamo, C. Bambagioni, M. Bianconi, V. Folli, V. Sala.

Notes

[1]This research project (title *Archaeology and Architectural design*) is part of a long-standing tradition of study and design in which theory and practice are productively combined.
Research Team group: proff. A.Torricelli, L. Ferro (coordinators), Dipartimento di Progettazione dell'Architettura, Politecnico di Milano with the Architects Viola Bertini, Elena Ciapparelli, Giovanni Comi, Davide Grazi, Maria Luisa Montanari, Sara Riboldi, Gianluca Sortino, Valerio Tolve.
The production and scientific research is closely connected to teaching knowledge and methodology in its intentions, also finding time processing in the Scuola di Architettura Civile del Politecnico di Milano (Laboratorio di Progettazione 3, Luisa Ferro e Laboratorio di Laurea Magistrale, Angelo Torricelli, Luisa Ferro); in practice activities of Dipartimento di Progettazione dell'Architettura and in the Ph.D research (Milano, Venezia).
Subjects and case studies (Atene, Campi flegrei, Milano, Villa Adriana Tivoli, Alessandria Egypt, Alexandria in Aria Afghanistan) have been introduced in several international seminars, workshops and publications.

[2]The project launched in 2007 includes a collaboration with the University of Torino (prof. Paolo Gallo), the Alexandria & Mediterranean Research Center, the Department of Architecture of Menofeya University and the Italian Archaeological Mission at Alexandria coordinated by Paolo Gallo. The current project mission entitled "Kosa Pasha Fort, Abuqir" (project coordinators A. Torricelli, L. Ferro, C. Pallini, Politecnico di Milano) is operating under an International Protocol of scientific collaboration with the Supreme Council of Antiquities (SCA) of Egypt.
Projects for Alexandria (Egypt), team project: proff. L. Ferro, A. Torricelli with the Architects E. Ciapparelli, V. Bertini. Students: E. Leguti, M. Maggi, C. Escobar, M. Lunghi, G. Tartarotti, A. Mantoan, S. Pin, F. Adamo, C. Bambagioni, M. Bianconi, V. Folli, V. Sala.

[3]The project for Alexandria in Aria (Herat, Afghanistan) was launched in 2010 in collaboration with the Department of Mathematics (prof. G. Magli), Politecnico di Milano.
Team project: proff. L: Ferro, S. Casolo with the Architects E. Ciapparelli, V. Bertini, Students V. Cattaneo, A. Citterio, J. Porro, E. Lepori, A. Nassivera, M. Tettamanti.

Gaetano Fusco
Università degli Studi Federico II, Italy

Veiling and unveiling. the urban dimension of architecture

Architecture is the most extreme way in which man affects our natural world; it involves a complex process of interaction between the site and the building, the building and the block, the block and the city. It is the home of man and partakes in the construction of the city which is ultimately the space we live in. To inhabit means to live in a delimited space; enclosing this space is the first, crucial feature of a building, of every building.[1] If its significant unit has always been the protected space of its elementary nucleus, Julian Guadet's *chambre*, its field of signification is the city, Colin Rowe's *collage city*.

Building elements and building types, considered as significant and hierarchised forms of architecture, are the 'building blocks' that determine the form of the city when joined together in space; they constitute, so to speak, its intelligible frame which always remains free and open to new experimentation. Design is the symbolic tool of experimentation; architectural composition uses analogies and metaphors to bend architectural types to the needs and techniques of modern architecture. The idea behind its ratio is its ability to produce and transmit design knowledge, in the words of Manuel Castells, to produce *knowledge through research*. In the new world of *digital mills* this is strongly influenced by the multimedia mannerisms of architectural design.

The dynamics of design creativity is uniquely justified by Ludwig Binswanger's considerations on *mannerism as a form of failed existence*. Binswanger applies the existential analysis of Martin Heidegger's *being-in-the-world* to figurative art forms and establishes the cyclical nature of *periods during which entire generations work in a mannerist manner* marked by the eulogy of *ideals of type* which like *weird masks indulge on the brink of the abyss*.[2]
The psychology of archetypes has explored the intimate quality of dwelling which, according to Gaston Bachelard, is linked to the memory of places, the *réveries* inscribed in man's homes.[3] Understanding the collective value that justifies their existence means acknowledging continuity, in the sense of architectural permanence, albeit in the presence of the inevitable changes imposed by growth mechanisms, social conditions and the culture and economy of an age. The phenomenal coherence between *architectural design and the urban fact itself lies in the tragic vision of form* in which György Lukács roots this unveiling of authenticity that builds reality through knowledge.[4] Architectural theory and practice have to vie with this awareness that is hand in glove with the endless material traces of architecture which in time become permanent in the urban landscape and pave the way for new experimental designs.

The nature of buildings and the cities where they stand is inscribed in the intimacy of places; architecture continues to encourage poiesis, in other words the invincible desire to create works of art which is, and remains, the primary objective of *builders of works subject to gravity* which for Fernando Távora means evoking not only the importance but also the intelligent and deliberate act of designing architecture. However, if the city is everywhere, we no longer live in it; we occupy land that is more or less metropolitan and globalised and its fragmentation is specular to the crisis of nature and inevitably overwhelms it.[5] The rule governing construction in the anthropological chaos of *supermodernity* now seems to be the negation of the possibility of place.[6]

A flawed urban model lies at the heart of the crisis of the suburbs and architecture must swiftly re-establish the relationship between *urbs* and *civitas*, between the city and its inhabitants. Urban space has long since lost the concept of centre, the *heart of the city* that Ernesto Nathan Rogers associates with the concept of a principle of unity of the urban ecosystem.[7] For some time now post-Fordist *liquid modernity* produces places that Zygmunt Bauman calls *public but not civic*, in other words places which – like Marc Augé's *non-places* - are islands of individualism that coexist with feverish consumption.[8] We need to fill this gap - this dilated space between Roger's heart and the liquid space of contemporary urban culture - with a new design culture, a new architectural landscape that uses urban design to reinterpret places and converse with the landscape. Adorno suggested we use "an architecture worthy of human beings".[9]

In Latin *modern* means, quite literally, *now*. The misunderstanding is between new and now; true modernity doesn't mean hanging on to the specious pretext of now, it means understanding that nothing *new* can be invented without creating a link with the past – because only then can we look to the future. Marc Fumaroli's review of the *Querelle des Anciens et des Modernes* is more topical then ever before; in actual fact, it throws opens the doors to end of the philosophy of western civilisation annihilated by the belief that what is *new* is unfailingly superior.[10] This new should categorically *never have been seen before*, it should last just long enough to be replaced by another autistic new.[11]

Like Baroque architecture that marked the end of the Renaissance, today's historical decline marks the eclipse of a stylistic age and de facto paves the way for a *new modernity* with inevitable, unexpected and new experimental possibilities leading to a profound renewal of the city, to the creation of a new, decisive identity and meaning between nature, agriculture and the city. Like clockwork, the drama of Walter Benjamin's *Angelus Novus* overruns the history of thought: for all that, and despite the fact it's dated, the book *De re aedificatoria* is still extremely modern and heroically topical compared to the embarrassing frailty of certain contemporary *architectural installations*. Alberti establishes the rules governing architectural theory and practice, what François-René de Chateaubriand calls the *rigorous intellectual discipline of the science of the past* considering the complexity and ensemble of architecture as a discipline and common heritage of mankind. He believes its genesis lies in understanding the reasons behind the transformation of places based on an authentic compositional style.

Monteruscello, the city designed by Agostino Renna

Agostino Renna's research on the primary elements of architecture, based on Rogers' theoretical division of the universe, establishes the poiesis of a style in order to encourage a return to architectural topics and figures. In his research on the measure of form the design logic coincides with traditional architectural procedures with the articulate reiterations of Karl Friedricj Schinkel's *Bauakademie* and the concise images of Ludwig Hilberseimer's *Groszstadt Architektur.*

Interspersed with asides and digressions, the unravelling of Renna's thoughts points to an epistemological systematicity and a rearrangement of knowledge that evolves into a process to create an architectural and urban design culture. One example is his systematic study of the constituent laws of urban form, of memory engraved on the land; a study that examines typological modules and urban elements in order to highlight the consolidated topics of architectural composition - symmetry, rhythm, module, proportions - as well as the elements of architectural construction - the wall, courtyard, portico, room: everything within the strict framework of an absolving redemption of style.

He writes "the composition of the parts is the construction of a formal law of balance. This is achieved using perspective, symmetry (harmonic ratio), modulation and repetition (elementary geometry)". A design method that uses only its own tools to illustrate architecture; a method that reduces the number of compositional and typological diagrams in favour of a powerful description of form charged with profound and complex meanings later illustrated in his book *L'illusione e i cristalli*. Renna's rational approach and ideas are inspired by German culture, especially Martin Heidegger's *Sein unt Zeit*.[13]

In 1983 Renna was asked to create a new city for people who had been evacuated from Rione Terra di Pozzuoli severely damaged by a sudden increase in bradyseismic phenomena.[14]The urban plan of Monteruscello, located in the unique landscape of the Phlegraean Fields, reveals the dramatic and visionary force of a humanist architectural and urban design thanks to Renna's constant use of elementary geometric elements. If on the one hand this exposes an attempt to redefine urban science, on the other the ossification of the architectural image is one way to search for memories reinforced by the structure of the formal elements as part of a process of addition in the urban layout which "also includes history and further clarification about what history of architecture has produced".[15] As a result, during the elaboration of the Phlegraean plan architecture interprets the social and urban importance of that area and gives concrete form to the materials of memory.

The logic of architectural addition in Renna's urban design illustrates the principles of architectural continuity with the city and the countryside and reintroduces the concept of rational urban form.

Renna's idea of a city reflects the principles of urban geography presented by Marcel Pöete at the École des Hautes Études Urbaines in Paris in the early twentieth century. He revised the discipline based on this new concept of unity between architecture and town planning and sparked a deep-rooted and important revision of urban architecture.[16] The main trait of the new city plan - the relationship between the central nucleus and the landscape - turned the principle of responsibility towards the landscape into a key feature of design. In other words the clear and comprehensive expressive force of architecture nestling in the landscape became, in itself, a landscape with which to identify and develop a sense of belonging, while the syntactic order of the design was based on a module reminiscent of Hippodamus' plan of Greek cities.

Renna's way of merging architecture, nature and the city emphasises the need to define new urban design strategies which should, nevertheless, still express the meaning and reason behind the necessary transformation of space. In short, the interest of design lies in redefining the city, shifting the nuances of the plan onto the rules and practical demonstration, onto harmonising the design with the reality on the ground. For years the square represented Rogers' concept of the *heart of the city*; here it is condensed in a scenic and landscaped object that absorbs visual tensions, colours and light. The landscape floods the city and the city organises itself in space in order to reflect its social structure. This is a technical, almost artisanal design based on the rules of composition and bearing in mind the concept of type as a *feeling of dwelling* that Renna considers "the foundation of a building, the focus of dwelling with universal features".[17]

The entire design has a beauty of its own, like old cities where the sea, the mountains, the fields, the hamlets and country houses merged in a unique *emotion of form* and its *familiarity* reflected a knowledge which, restless and remote, inspired choices and the final features of reality.[18]

Like crystals these forms express the distinctive character of the urban complex by using standard architectural elements because in Renna's words "only in crystals are contents truly universal; only in form can form itself fully exist".[19] What repeatedly emerges is the association between the concept of *type* and the importance of *familiarity,* considered in the formal and typological sense of the word in which order, repetition and uniformity represent its distinctive characteristics "because custom and repetition always provide their own explanation".[20] A *familiarity* intrinsic in architecture that expands in urban spaces like a persistent pre-design metaphysical legacy of places recalling a remote common origin and uniting standard building elements. Renna expresses his Bauen ist eine Lust in the familiarity and dimension of the urban landscape of Monteruscello.

Old cities future cities

The distinctive trait of architecture is the representation of space; the language of representation sinks its roots in memory while reality inspires new representations of form.
Classical architecture is rooted in the rational confirmation of the cognitive nature of the project, in establishing the syntactic aspect of the architectural composition. In the classical world form and beauty are perceived by the senses as one with the principles of proportion and harmony. The Presocratics defined it as a whole, structured and governed by a single law intended to describe it as form.[21] The entire classical world based its research on Pythagoras' aesthetic and mathematical vision of the universe, a world in which all things exist and are governed by mathematical laws that control our human existence as well as beauty.

During the Renaissance, the advent of perspective marked the heyday of a symbolic form of representation associated with the principle of reason considered as the yardstick of everything that focuses on man and his need for beauty. The principle of symmetry was used to underpin the importance of the perspective regularity of buildings while according to Luca Pacioli's *Section D'Or* the form of a design represented the principle of beauty. As a mix of truth and abstraction perspective representation creates a *numerical machine* whose forms illustrate the history of dwelling with the remarkable precision of numbers associated with intellective knowledge that becomes material matter.[22] As a result, an architectural design becomes a *poiesis of the number* that instils the idea in the building and establishes the logical and rational link between number and matter, between composition and the measure of form. Light, space and matter generate a design imbued with a dynamic interpretation of the spirituality of creation thanks to the clarity of the act which over the years remains in the urban landscape.

In the twentieth century the profound and prolific analytical interpretation of the core teachings of the *old masters* carried out by rationalist realism revealed a noble, cultured and simple language conveying purity, truth and emotion. In other words, an authentic compositional language that continues to foster the disenchantment of intelligence in order to breathe life and reintroduce measure and heart into urban architecture: purity created by the discreet addition of elements, truth drawn from the interpretation of culture and the meaning of places; emotions of a poiesis that converses with nature, the sky, the earth and the landscape, impressed in the balance of geometries that capture the light and invent urban space.

The metaphor in the book *Archipelago* by Massimo Cacciari lies in the author's powerful reference to the culture of Greek *polises*, to the *ethos* of multiplicity as the seat and residence of life. Like the cosmology of Giordano Bruno's *infinite worlds*, it is a space in which the centre is everywhere, just as the identity of polises is multiple. Old cities are polis and oîkos, like the double nature of man, like Ulysses and Achilles, the *symmetrical souls* of ancient Greece.[23] The past is central to *oîkos*, while the future is the destiny of *polis*. The values of the former challenge those of the latter and vice versa, but they both endure in the incessant renewal of their conflict.

Although these two poles challenge each other they also coexist: polis inevitably advances into the future – the Ulysses' unrenounceable journey; *oîkos* is nostalgia for the past, the inevitable return of Achilles.[24] *Polis* tries to assert the constant changes in the artifice of its own construction, yet *oîkos* will always "assert the arrogance of its own womb on artifice".[25] The critical issue of the legacy of the ancient city is the long-term effect reflecting the crisis of contemporary urban culture. Françoise Choay maintains that today's disaster lies in the amnesia of the *ratio aedificatio* that no longer uses the past as the memory of the project.[26]

The question of the old city versus the city of the future should not ignore the principles drafted by the French School of Geographers regarding the concept of architecture and town planning.[27]One characteristic of the Modern Movement was its ethical and aesthetic commitment to design forms and building types theoretically based on the need for a new social balance.[28] Contemporary architectural culture appears to be hypnotised by *liquid* architectures displayed in a controversial process of aestheticisation of the world.

The involutional crisis of urban design stems from the ontological crisis of the discipline. Trying to solve the fatal disorder of the urban systems of the last fifty years means closing what can finally be considered merely a parenthesis in the centuries-old history of cities. It means placing at the heart of architectural design the ontological knowledge of rules, the deductive knowledge of principles, the analogical knowledge of forms – all crucial in order to inject new meaning into the design crucible of form and technique, art and life, measure and beauty of architecture. We know that the crisis of modern cities comes from having given up the search for a new urban utopia, but the lesson we've learnt about urban science is once again dramatically topical if we want to express the sense and meaning of the necessary transformation of urban space.

Notes

[1] *Cfr* Scott G., *The Architecture of Humanism. A Study in the History of Taste*, W.W. Norton & Company, New York, 1999. "When we build we do but detach a convenient quantity of space, seclude it and protect it".

[2] *Cfr* Binswanger L., *Extravagance, Eccentricity, Mannerism. Three Modes of Failed Life*, 1956; original title: *Drei Formen Missglückten Daseins*, Max Niemeyer Verlag, Tübingen 1936, passim.

[3] *Cfr* Bachelard G., *The Poetics of Space*, Beacon Press, Boston, 1969 (first ed. 1975), translation from the French by Maria Jolas; original title: *La poetique de l'espace*, Presses Universitaires de France, Paris 1957, passim.

[4] Lukács G., *Soul and Form*, Columbia University Press, Mass. USA, 2010, translated by Anna Bostock; original title: *Die Seele und die Formen*, Egon Fleischel & Co., Berlin 1911, passim.

[5] *Cfr* Cacciari M., *La Repubblica*, May 1, 2002, p. 43.

[6] For more information about the concept of superrmodernity, see Augè M., *Non-places. Introduction to an anthropology of supermodernity*, Verso, London 1995 (first ed. 1992); original title: *Non-lieux*, 1992 Seuil.

[7] Rogers E.N., *Il cuore: problema umano della città*, in Esperienza dell'architettura, (edited by L. Molinari), Skira, Milan 1997.

[8] *Cfr* Bauman Z., *Liquid Modernity*, Polity Press, Cambridge 2000, passim. Marc Augè, Non-places, op. cit.

[9] Adorno T.W., *Asilo per senzatetto*, in Minima Moralia, *Meditazioni della vita offesa*, Einaudi, Turin 1994, p. 34 (first ed. 1954). Original title: *Minima Moralia. Reflexionen aus dem beschädigten Leben*, Suhrkamp, Frankfurt am Main, 1951.

[10] *Cfr* Fumaroli M., *Le api e i ragni. La disputa degli antichi e dei Moderni*, Adelphi, Milano 2005. Original title: *Les Abeilles et les araignées*, Edizioni Gallimard, Paris 2001.

[11] Augè M., *Non-places*, op. cit.

[12] Renna A., *L'illusione e i cristalli. Immagini di architettura da una terra di provincia*, Edizioni Clear, Rome 1980, p. 244.

[13] *Cfr* Martin Heidegger, *Bauen Wohnen Denken*, in *Vorträge und Asfsätze*, Verlag Günther Neske Pfullingen, Berlin 1954;

[14] Every so often the bradyseism in the volcanic caldera of the Phlegraean Fields causes the earth's surface to rise and fall. In the three years between 1982 and1984, 30,000 individuals were evacuated from Rione Terra di Pozzuoli, the oldest Greek-Roman settlement along the coast of the Campania region and relocated to Monteruscello.

[15] Rossi A., *I quaderni azzurri*, edited by Dal Co F., Electa, Milan 1999, n.4.

[16] *Cfr* Pöete M., *Introduction à l'urbanisme. L'évolution des villes, La leçon de l'antiquité*, Paris, Boivin 1929.

[17] Renna A., op. cit., p.241.

[18] *ivi*.

[19] *Ibidem*. "So we should ask ourselves whether the importance of a project…*lies first and foremost in the positive relationship it establishes with the reality of the city, with the emotions it inspires"*., p. 170.

[20] *ibidem*.

[21] *Cfr* Valéry P., *Eupalinos ou l'Architecte*, Paris 1921. Phedre asks about the language of form and Socrates replies "*Certain populations loose themselves in their thoughts, but for us Greeks everything is form*", ivi, p. 29.

[22] *Cfr* Florenskij P.A., *Socinenija v certyrech tomach*, Mosca1999, *passim*.

[23] Cacciari M., *L'Arcipelago*, Adelphi, Milan 1997, p. 23.

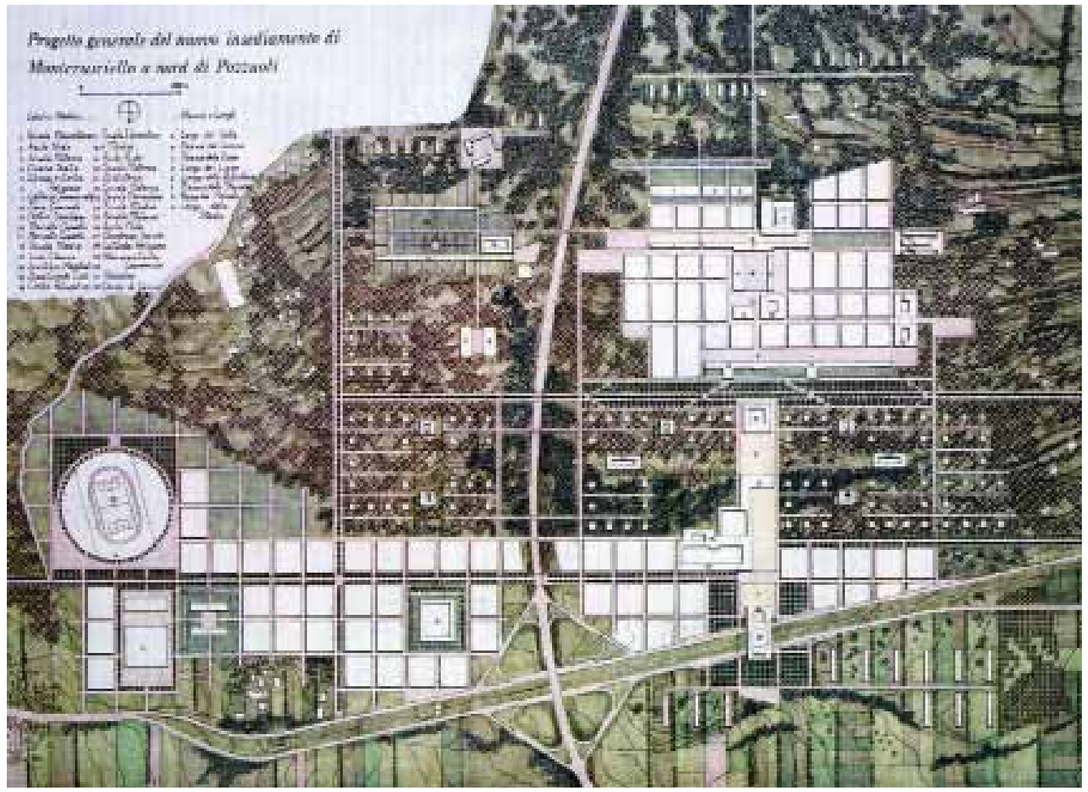
[24] *ibid*. p. 41.

[25] *ibid*. p. 40.

[26] Choay F., *La règle et le modèle: Sur la théorie de l'architecture et de l'urbanisme*. Paris, Editions du Seuil, 1980.

[27] Regarding the contribution of the French School of Geographers to town planning, mention is made here to three books that have influenced our idea of the city: 1 - Poëte M., *Introduction à l'urbanisme, op. cit*.; 2 - Pirenne H., *Les villes du Moyen Age*, Presse Universitaires de France Paris 1926; 3 - De Coulanges F., *La Cité antique*, Paris, 1864.

[28] *Cfr* Oechslin W., Wagner, *Loos e l'evoluzione dell'architettura moderna*, Skira, Milan 2004, passim.



Carlo Gandolfi
Politecnico di Milano, Italy

Somewhere / Nowhere

Architecture is – ontologically and by definition – a contemporary fact: simultaneous to human life and reverb present (and future) of the thrusts that move it.
In the song *Something about England*, contained in the extraordinary album *Sandinista*!, the punk-rock British band "The Clash" was singing in 1980, relating about London after the second world war:

«The few returned to old Piccadilly
We limped around Leicester Square
The world was busy rebuilding itself
The architects could not care»

The architects could not care. I would like to put the focus on the verb "to care". *To care for something* means to provide the utmost account to *something*. In this case at architecture.
In this essay I would like to try to delineate a condition of our cities and a specific case that is a useful approach to the project.

The excessive and fast, compulsive, uncontrolled, desperate change of the cities. Stable backdrops become fragile and ephemeral images. The flow of information translates into oblivion, the fragility of remembrance bewilders. Model episodes can only be approximated because of their instability, but draw a paradox of the future of what Aldo Rossi was calling: "the fixed scene of human life".
In China, for instance, large cities planned for a not too dreamed or imagined future, have already been deserted; in Europe, the effort is to outline new structures, edges, sides, landscapes, places; in South America cities within cities are growing and dividing.
What is the result of such instability?
The loss of deep etymon of urban space and its collective realization; the hypertrophy of architecture on which the extreme consequence of the transformation of the last century is resting and with whom it should relate intensely and harmonically. A tranformation that Baudelaire had well recognized opposing to finiteness, to stability and to monumentality, "the fluctuating, the motion, the fugitive, the infinite."
How can today, the architectural plan address the urban condition?
In a city fully expressing contemporary world, what might be called the paradigm of post-metropolis, São Paulo, buildings may establish a strong relationship with the open space, dictating the pace of some parts of the city.
In São Paulo, Paulo Mendes da Rocha, a member of the so-called "Paulista School" of which Vilanova Artigas was the leader, has been building strong interactions with the city and has addressed the urban concept with great intellectual power.
«A house is a small city and the city is a small house» was the slogan of Vilanova Artigas (and the one of Alberti and Palladio too), it defines the attention of these architects in respect of the tension of the building with the open space. The strong relationship established with the city seems to be an effective response by architecture itself: an architecture that regains its deep character and sets the city as nature. It is so that men's emotional condition in the city can recover its essence. The emotion is viewed as an universalizing notion, transmittable, communicable, diagonal with respect to time and space, producing a sense of community.
The porch in the Praça do Patriarca, the Brazilian Museum of Sculpture and the Poupatempo are three examples dealing with ample and heterogeneous planning issues.
After years of paralysis of new instances, truly forward-looking, just looking at architecture, just getting it back to the center of the scene, can rekindle the debate and the dream of new ideas of a city. I would like to use a work of art in order to describe a salient trait of the contemporary city and, in this case, the metropolis.
The Cuban born American artist Félix González-Torres completed an extraordinary work in 1989-90 titled *Somewhere better than this place / Nowhere better than this place*. [1]
This work features two stacks of paper, one next to each other, bringing together space and time in an infinite, circular and obsessive action. The term refers to a notion of indifference deriving from not knowing the place in question.
There is a sense of uneasiness emerging from this work, a sort of frustration and inability to find a precise place, mental and physical. This inability stems from the dispersion and the undefined lack of limits of the metropolis tends to create: one spot looks like another, devoid of charisma and recognition hence, impossible to remember.

The term *somewhere* refers to this loss. It conveys the unease of endless metropolis and the equivalence of parts without character in which, paradoxically, architectures less "works" and more "events" are proposed as equivalent objects, such as buildings with no peculiarities or deep conceptual strategies may become buildings to be "nowhere". The *somewhere/nowhere* duality describes the undetermined, the equivalence of directions. Under such conditions, the measurement of construction and space happens through time. Spaces are dilated, the city's "scenic" sequences are changeable and unstable. Conceptual limits are blurred. Getting your bearings, a primitive human need, becomes more and more difficult.

In 1990 the same artist, as a result of the loss of his beloved one, produced a series of posters with strong symbolic features. The subject is an empty bed. The tragic dimension of intimacy breaks into the cities, invades public transport: private life, once protected inside the home, is exposed. This happens through a paradox: being able to go unnoticed through the city, where everything looks the same and where violent polyphonies confuse sounds, origins, messages.

Through the main character of his incomplete masterpiece *Der Mann ohne Eigenschaften*, Robert Musil expresses with great precision some of the distinctive traits of the contemporary man in cities of today.

The author, before describing the protagonist in detail, opens the romance with the description of a city, and not that of a man, without qualities «[...] we therefore will not give great importance to the name of the city. Like any other metropolis, it was composed of irregularities, alternations, precipitations, intermittences, collisions of things and events, and, in between, points of abyssal silence; of rails and virgin lands, of a rhythmic beat and of the eternal disaccord and upheaval of all rhythms; overall it resembled a boiling bladder in a container materiased (sic) of houses, laws, regulations and historical traditions.[...].» [2]
City and man express the same uneasiness: «for him nothing is sound, everything everchanging, part of a whole, of innumerable wholes that allegedly belong to a super-whole, which is totally unknown» [3]
Benjamin used to say: «the century was not able to respond to the new technical virtualities with a new social order» [4]. The sentence seems to have been written for our times, and not for the 19th century. It is precisely this divorce between technical progress, society and architecture that seems to lead to the misunderstanding of spaces that nullify in their deep essence.
This nullification deprives spaces of their coordinates, making them difficult to read, detect and recognise. Their memory tarnishes, as if it were precipitated in a *mare magnum* of signs.

Deformed and transfigured into its own idea or result of the lack of ideas, the city is still a backdrop where experiences and events are deposited and crystalized. It is therefore some sort of an emotional device: according to Adam Caruso «The urban environment is a precise emotional condition. Being in the city feels a certain way. This is similar to being at home, you know when you feel at home, when you can take your shoes off and relax. This feeling of being at home can be communicated to other people even though they live in different kinds of homes» [5]
Emotion is seen as a universalizing notion, communicable and diagonal with respect to time and space and it produces a sense of community. Perhaps this is, in fact, one of the major binders of ideologies and religions. In a contemporary world where contact and displacement are increasingly replaced by electronic network, also feelings and emotions are replaced by projections and accessions to preconceptions. A click summarizes the story of the emotions that become standard, approvals, *pret-a-porter* to wear in order to eliminate differences, crises and to be, quietly and without worries, ordinary men, in any time, in any space.
Just at this time of "approved emotions", in the western world, religions and ideologies tend to cancel their own. In Brazil there are hundreds of sects and new doctrines that derive in part from a previous mixité, but above all resting on a population that could be called "high emotional content". [6]
In this sense, San Paulo, can connote the essence of the places through its relationship with a party, with an event, the "show" of its inhabitants. "Low" ideology and culture and "high" religion and feeling - in this case - as if they would protect the emotionality of the cities, giving temporary connotations, yet profound and ritual.
«Being in the city feels a certain way - continues Caruso - This is similar to being at home, you know when you feel at home, when you can take your shoes off and relax. This feeling of being at home can be communicated to other people even though they live in different kinds of homes. […] At the turn of the century, the propriety of the home was a central theme in the discourses of architects like Semper and Loos, who tried to articulate what was the difference between a house and a public building.

[...]Architecture should be sensitive to those emotional qualities that define the city, melancholy, expectancy, pathos, hope. If one accepts that architecture is about altering and extending what is already there, one can engage the powerful presence of the real so that the aura of urbanity is amplified and extended in the place that one is working»

What could change "what is already there"?

What kind of architecture should we have in mind today?

What tools are suitable for the project in order to win what was said?

It is interesting to draw some operating instances with respect to these issues starting from the Paulista experience and, as mentioned, in particular from that of Paulo Mendes da Rocha.
Return to space, leave the event, leave the pure language, leave the style, is certainly a possible solution. As an architect I cannot imagine the architecture only written, and willing to act as a craftsman, I always try to search the appropriate tool. Studying the work of Paulo Mendes da Rocha has given me, in this sense, some very interesting insights.
One of the design tools capable of applying power to the internal architecture instances with the action of the open space is the section.
Sections foreshadow at a glance, not only the caliber of the building and its spatial constructive and tectonic economies. Sections enact the life within them, imagining routes, points of view, looks, relationships.
Section, it is said, is a frame: a snapshot taken at the point X of the plan.
Section is a typical tool of direction, tool to tell the space; section is method and tool method and tool set that for Mendes is understood as a story, the story of architecture.
The vertical section reveals what is inside, cut a whole and shows, as if in an anatomical theater, his entrails, what from the city is invisible once the building is complete.

For Mendes da Rocha is a sort of *mise en scène* of a register that has to be innate to the space. Almost like music. Those vertical section (that we can define "typological") express the concept that the building contains: transparency, identity, recognition, memory.

His directing attitude derives from the use of vertical section as an instrument of spacial foreshadowing and fixing idea, the spatial "timber" (character) of architecture that, with other architectures, past and present, far and near, enters into a relationship.

When he runs along his spaces with his memory - a kind of memory ex post, a memory that is being created in-built, like the life lived within it - Mendes transforms himself, becoming part of the story.
Eizenstejn, in *Towards a Theory of Montage* [7], correlates movie direction with architecture.
We can consider mountage a form of composition and Eizenstejn, assimilating the composition of the Acropolis space to a sequence of a movie scene puts emphasis on the movement in space, in time. This movement requires a pause that seems to be possible from the memory of the same space.
Maurice Cerasi, in his short essay *Movement in Architecture* equates silence with this memory: "Movie has taught us the memory of the movement in space. It is the silence of space recently became empty: the yard of the farmhouse with lights that go off in "Pianeta Azzurro" by Piavoli, the outside of the cinema in "Im Lauf der Zeit" by Wim Wenders, the empty streets of St. Petersburg after the military crackdown in "Potemkin" by Eisenstein; the action that has just been held in the memory is superimposed to the image of the space that lies ahead. These are moments that give the measure and meaning ofthat particular space finally seen in its physical essence because it no longer crowded with people" [8]

Motion occurs in space as an environment and in time. Memory runs through time, belongs to time and space. Compared to the theme of space-time and film, I wish to recall a passage from the essay by Manfredo Tafuri "Order and disorder" in which the author, about the public by Mies, speaks as if he considered the German architect as a director: «The film rhythm is reduced to its primary laws: the discontinuity of the frames and their absolute abstractness are the result of a closing of the time and space to empty fields of relationships. In the metropolis, relationship is everything. No "content" is communicable beyond it. Mies crystallizes this "cult of the relationship." His plans for brick houses and even more, the Barcelona Pavilion of 1929, are reduced to the presentation of the primary tools of the form (shape). The Barcelona Pavilion, in this sense, has nothing to exhibit but itself. True "total theatre", it compels the viewer to wander through a maze of meaningless signs revealing the daily condition of "the man of the crowd" absorbed in the great urban machine. In the absolute silence, the audience of Mies hall is forced to recognize that it is impossible to "reintegrate" the metropolis: the negative is now fixed as a synthesis of infinite freedom in a prison all the more inflexible the more "open".»[9]
It is a profound sense of research. After all, even the place of the Barcelona Pavilion, which Tafuri describes as «True "total theater"» that « […] compels the viewer to wander through a maze of signs meaningless», is a place with a conceptual density. This is a device capable of triggering the "emotionality" which was mentioned above.
In the memories of our life, between the passing of our events, is more natural to assign meanings to architecture, meanings related to past, fear, contingency. Project overlaps with the life and the directorial attitude is nothing more than the translation of this methodological overlap.

Even before the director, the painting has been the vehicle by which man has represented life, fear, hope, dreams, ecstasy, landscape, memories.
In this sense, as regards to the idea of permanence of architecture compared to life, that is action or inaction within a system, I remember a picture by Angelo Morbelli (1853-1919).

The title is *Natale dei rimasti*. In the picture are depicted some elders characterized by their loneliness out of any moralizing. These elders are in a large room similar to a chapel built inside a building.

Architecture collects life: this picture is also mentioned in a beautiful passage from the clipboard contents in Aldo Rossi's Quaderni azzurri which well expresses – as Rossi usually does – the relationship between life and what life guards, frames, protects.[10]

It is a research of the origins and precisely this research seems implicit in Mendes because it's a part by research reiterates that man with his life. On the one hand, considering architecture as a technical object – and this is far from functionalist attitude – and on the other side as through use of life.

Creating virtual rooms in the city casting shadows on the ground means repeating the space without interrupting the continuity of the soil. Covering ground space also means to define it only by light, without any enclosure.

The contemporary city is made of borders, security grids (as James Graham Ballard reminds us!), fixed routes: forbidden places, where you cannot stand.

In the din, the pause creates the place and protects the man, according to his oldest attitude: the search for a shelter. The big

porch of Praça do Patriarca is a place of rest within the city. It is resting in the older sense of the term. This is a place where the ride, the move stops. Standing in a place coincides, once again, with memory. The rest includes a notion of stasis, breaks, suspension of all movements.

When you stop along a journey, you stop the motion and you find a place. As antithetical to it, the rest is a condition related with movement in space and ime. We always stop in a space, in a time. What kind of quality does this space need to own in order to be remembered? In Paulo Mendes da Rocha's architecture, for instance, this is a light space, with a high "density" conceptual nature.

In order to think (and dream) about our cities and our future in the cities; in order to care about them; in order to restart a new attitude for urban space, we have to think about strong and appropriate architectures. To care, maybe, means to subvert an order and put at the heart of the matter a new – and perhaps old at the same time – point of view on reality.
Maybe to start to dream once again, sailing in the wind, on a visionary bridge..

Notes

[1] Félix Gonzalez-Torres. *Somewhere / Nowhere, Algun lugar / Ningum lugar*, Malba / Fundación Costantini, Buenos Aires, 2008

[2] Robert Musil, *Der Mann ohne Eigenshaften*, Rohvolt Verlag, Berlin

[3] Robert Musil, *Op.cit*., pag. 734

[4] Walter Benjamin, *Paris, capitale du XIX siécle, Exposé (1939)*, in Idem, *Ecrits Français*, Gallimard, 1991, pag. 308. See also David F. Nobel, *The Religion of Technology; The Divinity of Man and the Spirit of Invention*, Knopf, New York, 1997

[5] Adam Caruso, *The Emotional City*, «Quaderns», n° 228, Jan. 2001, pp. 8-13

[6] Cfr. Claude Lévi-Strauss, *Il pensiero selvaggio*, Parigi, 1962, pp. 44-47 e Giorgio Agamhen, *Il paese dei balocchi. Riflessioni sulla storia e sul gioco, in Infanzia e storia. Distruzione dell'esperienza e origine della storia*, Einaudi, Torino, 1978, pp. 67-92

[7] Sergej M. Eizenstejn, *Towards a Theory of Montage*, British Film Institute, London, 1994. pp. 78-79.

[8] Maurice Cerasi, *Movimento in Architettura: note in margine ad alcuni disegni*, in Gianni Cislaghi e Marco Prusicki, a cura di, Maurice M. Cerasi, *Progetto di architettura*, Clup, Milano, 1985, pp. 17-24. The mentioned movie is *Il pianeta azzurro*, by Franco Piavoli, 1982

[9] Manfredo Tafuri, *Ordine e disordine*, in «Casabella», n° 421, anno XLI, gennaio 1977.

[10] Aldo Rossi, *Quaderni azzurri*, n° 21, a cura di Francesco Dal Co, Electa, Milano, 1999.

Bibliography:

Carlo Gandolfi, *Paulo Mendes da Rocha. La sostenibile architettura dello spazio*, Magazine del Festival dell'architettura, Parma, dicembre 2010

Ignasi de Solà-Morales, *Urbanité Intersticielle*, «Inter Art Actuel», n° 61, 1995

Ignasi de Solà-Morales, *Terrain Vague*, «Quaderns», n° 212, 1996

Massimo Cacciari, *La città*, Pazzini, Villa Verucchio, 2004

Ricardo Marques de Azevedo, *Metrópole: abstração*, Perspectiva, São Paulo, 2006

Nicolás Fratarelli, *Mirada y critica. Ciudad, Arquitectura, Globalizacíon y Territorio*, Contratiempo, Buenos Aires, 2009

Guilherme Wisnik, *Estado critíco. À deriva das cidades*, Publifolha, São Paulo, 2009

Jean Baudrillard, *Amérique*, Grasset, Paris, 1986

Rosa Artigas, Paulo Mendes da Rocha, Rizzoli International, New York, 2007

Sofia Telles Silva, *A casa no Atlântico*, «AU Arquitetura e Urbanismo», n° 60, june-july, 1995

Captions:

Félix González-Torres, No title + *Somewhere better than this place / Nowhere better than this place*, 1989-1990

Viaduto do Minhocão, São Paulo, 2006, Courtesy Giovanna Silva

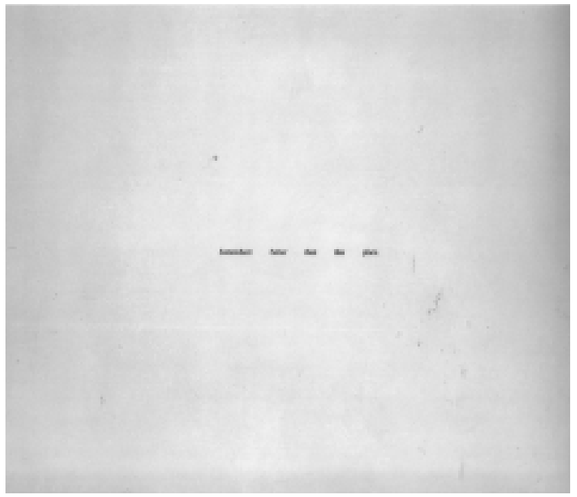
Beato Angelico, *Il sogno di Papa Onorio III*

Angelo Morbelli, *Il Natale dei rimasti*

Transbordeur, Marseille

Catavento in the Pampa, Argentina, Carlo Gandolfi, 2009

Sailing on the Bridge, 1795



Małgorzata Hanzl
Technical University of Lodz, Poland

Culture as a Determinant of City Form. The case of the former Jewish district in Lodz

1. Introduction

When regarding the development of physical structures in relation to culture the built form constitutes an important repository of cultural information, an artefact of cultures and societies that created them in a given time (Lefebrvre 2003), (Dubos 1955), (Alexander 1977), (Rossi 1984). The analysis of existing and former urban structures provides an important tool for the creation of new ones, which not only follow the site's genius loci and local tradition but at the same time stay in compliance with the integral cultural patterns of social groups. Contemporary research on the social production of space seeks to place the understanding of built form in the larger context of society's institutions and history (Lefebrvre 2003). The relation of patterns of people movements and the physical environment was underlined by Hillier and Hanson (2003), who introduced the concept of spatial logic of space.

Direct contact with the environment allows for observation and validation. The development of theories referring to urban perception started with Lynch (1960), (1994) and Debord (1950). The theoretical body for the studies is derived from Lynch's theory (1960), developed by Venturi (2001). Sequential analyses were always present in architectural theory (Panarai et al. 2009), their comeback started since Sitte (1996) and was developed by the British Picturesque School (Cullen 2008). Currently, concentration on the human perception of cityscape became a common approach (Kempf 2010), which contains also its psycho-geographical examinations.

The perception of urban scapes is a subject of the beauty canons, which express the spirit of the particular era. During the 20th century, this process occurred mostly in the case of modernist transformations of downtown areas, where former structures, particularly from the 19th century – perceived as obsolete – were replaced. The changes and differences in beauty canons follow the mental interpretation of perceived images (Adorno 2011), (Strzemiński 1974). The important issue, which influences the perception of city structures, is the cultural background of citizens and designers. Proxemics, constituting a part of the anthropological approach, relates the human environment to the behavioural patterns proper for distinguished cultures. The differences in personal distances influence both the perception of space and its production (Hall 1966).

The analyses of urban morphology in Poland so far based on the methodology of MRG Conzen and was developed for Lodz by Koter (among others: 1979, 1984). Conzenian research (resumed 2004), developed further by, e.g., Whitehand et al. (2000a), Whitehand (2001), concentrated on examination of urban structure mostly in its plan aspects, against the economic and social background, looking for relations between the city, its inhabitants and the dynamics of city construction (Vernez Moudon A. 1997: 4). The lack of analyses of physical form pointed by Bandini (2000: 133) doesn't allow for examination of appearance of urban scapes which constitutes an element of culture. A comprehensive set of features allowing for making characteristics of physical structures, including the culture related ones, was developed, among others, by Rapoport (1990: 106-107).

2. The Lodz 'Jewish District' – an example of 'shtetl culture'

The paper implements the above methodology in the analyses of the former Jewish district in Lodz, in the 19th century, the district served as a habitat of the multiethnic society, in which Jews constituted a majority (Hanzl 2011, 2011a). The transformation processes, which started during the World War II and continued during the socialism period, prove the presence of utterly different approaches resulting of both civilisation changes and cultural differences. The numerous studies concerning the culture of Jewish emigrants from the areas of Eastern Europe deal with the characteristic features of the life in small towns, villages and districts of bigger cities defining them under the same notion of 'the shtetl' (Zborowski, Herzog 1962, Ertel 2011, Wirth 1962).

Much has been written about the Jewish architectural heritage in Lodz (Wesołowski 2009, Walicki 2000, Stefański, Szrajber 2009), but there is probably no description referring to the urban structure of the areas inhabited by Jewish citizens. These settings were commonly described as possessing a special 'Jewish' character, e.g. in Bonisławski (1998). The descriptions, frequent in the literature, indicate at the presence of narrow, "circulating" back- streets of the downtown part of Bałuty district and of the Old City as at an example of spontaneous development (Friedman 1935: 94). An attempt has been made to define a certain set of features proper to the area, describing its morphological structure (Hanzl 2011, 2011a), which is repeated in most Polish towns and neighbourhoods populated by Jews (Dylewski 2003, Hanzl in *press*). The characteristics of the physical form was significantly altered during their stay in Lodz.

The case study refers mainly to the areas of the Old Town and of the central part of Nowe Bałuty. Some features proper for Jewish concentration concerned also the area of Nowe Miasto, established in 1821-1823 by Rajmund Rembieliński, though the level of assimilation processes of the society living there, the mixing of different groups and the character of spaces represented different stages of urbanisation processes (Wirth 1938).

3. The results of analyses – the character of constructions

The character of urban structures in the area populated by Jews was considerably altered during the period of their inhabitancy. The creation of the Jewish zone and the regulations, which were mandatory, concerning the obligation of erecting only brick houses instead of wooden ones, considerably influenced the appearance of the area. Additionally the interpretation by the Commission of Mazovian Voivodeships of 23 June 1828 of the Decree establishing the zone, made it impossible for Jews to inhabit wooden houses - bought from Christians, compelling them to change the constructions into bricked, which precipitated the whole processes.

The erection of first brick houses in the market was undertaken in 1825 and subsequently encouraged other investors (Friedman 1863: 53). Gradually, along with the progressive extension of territories populated by Jews, larger and larger areas were transformed, containing the tenements, which they constructed. The regulation imposing the duty to construct the tenements of brick was also initially introduced in the area of Nowe Bałuty, but the disarray connected with the final determination of the rights to the land and the court plies being its result (Puś 2003: 40, Friedman 1863: 90), made the effective execution of this law impossible.

The ground floors of tenements comprised shops and magazines, exchange offices, services and artisans' workshops. The one-story buildings usually contained also a flat of the family leading the business, though there were exceptions from this rule (Friedman 1863: 59). The buildings included the exact number of stories following the economic purpose; nothing that could occur redundant was erected (Spodenkiewicz 1999). The quality of constructions may be characterised in the similar way - everything was built the cheapest way possible to obtain the assumed economic effect, which in few cases ended with the building catastrophes (Walicki 2000: 17-18). At the same time the real estate prices as well as the economic status of some citizens determined the need to construct tenements of higher standards, with rich architectural decoration, of considerable cubature and up to five stories high. They clearly stood out from the surroundings and comprised not only the flat of the proprietor, usually owner of the shop in the ground floor, but also flats for rent of standard higher than average. As an effect the buildings of the discussed area varied in size and quality; starting from the one story wooden houses with high roofs, preserved from the times of rural village Łódka, up to few stories tenements. There were some abundantly decorated tenements, but there were also simple facades, devoid of any architectural detail.

The diversity of street facades was enhanced by the limited width of parcel fronts: in the former Old Market it was ca 15m, in other streets the average value was 21m. The values changed both in space and in time. Numerous entrances accompanied the dense parcel divisions, which enhanced the space vitality (Gehl 2009). The analysis of the character of 19th century constructions indicates at the presence of the concise line of frontages of the defined urban character.

The breaks in the lines of frontages often served as pedestrian passages, which is visible in archival photographs. Some of them are remaining empty spaces after the destroyed, earlier wooden buildings.

4. Shape of public spaces, sequential analyses

4.1. General features

The examination of the character of public spaces as they are perceived by observers, in the case of scapes, which do not exist in their original form, includes mainly the analysis of archival photographs. The subject of analysis is first the shape of public realm itself, both in 2D plan view, and the cross-section and street silhouette. Moreover the sequences of views in time and character of buildings itself should be analysed. The depth of space, as defined by Benedikt (1979) may be analysed as an additional resource.

The essential features of the outdoor space, characteristic for the given area refer to the issues of scale and dimensions. The narrowness of streets and presence of numerous slight turns and directional differentiation, providing the notion of concavity, thus closing the perspective and assuring perceived and felt closure, are factors favouring direct physical interaction. Gehl (2009) indicates at small dimensions of spaces as favourable for establishing relations. The irregularity of enclosures of streets, their broken line, the apparent lack of precise form, which enlarged the amount of border space, where people stop more willingly than in the centre of an open space, facilitates transactions, presentations of goods, etc. The abundance of such spaces enabled the location of numerous outdoor, commercial furniture: stalls, kiosks, stands and presentations encouraging buying. Furthermore, purchase was encouraged by the merchants' activity; by the way, not all methods were upright . The aforementioned behaviours are also the most successful in narrow and intimate places; even in the comparably wide streets such as Zgierska or Łagiewnicka the pavements remained narrow.

Whyte (2009) defines the set of features of outdoor space favouring contacts and fostering relations pointing at the location inside of the human flow. Gehl (2009: 150) underlines the role of the corrugation of the edge of space (through the presence of elements of urban equipment and the shape of walls themselves) as a feature important for enhancing communal life. In the case of the discussed area the tightness of some places, the complication of wall shapes, the apparent chaos could hinder concentration and easiness of perception by persons from outside, which could by turn facilitate transactions profitable for sellers (not necessarily for buyers). Attracting passers-by, was fostered by the presence of numerous small size elements in the outdoor space, providing sham shelter – Cullen (2008: 103-105) describes this phenomena using the example of a street „cross", the main function of which was to stop pedestrians. Here such role, less formal, was fulfilled by outhouses and stalls. Whyte (2009) confirms the observation concerning attractiveness of elements freely distributed in the outdoor space.

4.2. The ubiquity of commerce

The basic character of the area of concern may be defined as the ubiquity of commerce. In 1913 there were 4050 shops and trade companies in Lodz, majority of them owned by Jews (Puś 2006: 58). In the description of the Old Market, which used to fulfil the functions of a marketplace, one reads: "*The small, poky space was heaped high with piles of merchandise... the intensive movement, most of all on fair days, both residents of the city of several thousand, local peasants and merchants from other cities were huddling together, buying and selling.*" (Friedman 2006: 57-58) The space of commerce was not restricted to the main square, it was present in the neighbouring streets and passages. The assortment of goods covered all branches.

Frequent protrusions of buildings, especially of commercial and service use (gastronomy, etc) additionally influenced the presence of service in the public sphere, and thus improved the effectiveness of sale. Very rational management of space, lack of space without prescribed use, frequent overlapping and synergy of different uses of the same space completed the above picture. Limited scale both of streets and squares, which on the one hand facilitated the development of commerce, and on the other was related to the smaller interpersonal distances, than in case of other nations. Jews often choose the settlement location in the direct proximity of commercial places. After settling, they usually redeveloped their environment introducing enhancements with regard to the requirements of commerce.

4.3. Analyses of the sociometric layout,

The physical structures, in the Jewish period, due to the breaks in the lines of frontages surrounding most of the blocks, allowed for enriching of the initial network of streets with numerous passages, small squares, nooks, completing the official sociometric layout with the possibility of informal circulation in the area. The actual network of passages was thus richer than the layout of streets, laid out as part of the initial parcellation. Hillier and Hanson (2003: 53-66) indicate at the relation between the characteristic of a given society and the sociometric layout, which is created by the group.

The dense network of curvy streets, alleys, nooks, passages and pedestrian ways, including informal passages through private properties is a characteristic feature for the whole of the discussed area – also in the part of Nowe Miasto inhabited by Jews the number of such junctions is higher than elsewhere. The density of the street network is a feature, which Jacobs (1992) qualifies as facilitating the development of all kinds of services, especially commerce in the ground floor of buildings, as it stimulates pedestrian movement. Most of the connections remained mostly pedestrian, which fostered the presentation of goods and making deals.

4.4 Issues related to proxemics

The proxemics approach, presented by Hall (2009) and his successors, examines the relation of spatial patterns of usage of space in different cultures with the material environment. The differences between morphological structures representing various cultures are particularly apparent in cities, which like Lodz had become a melting pot of many cultures. Hall (2009) identifies direct relationships between interpersonal distances and other characteristics specific to individuals and communities and the way they shape their own physical environment. Hillier and Hanson (2003: 27) refer to the usage of space and the patterns of behaviour appropriate for different communities and ethnic groups as the determinants of the final shape of urban structures. According to Hillier (2009) city is seen as a system of visual distances, which is strongly influenced both by perception and personal distances.

In nomadic tribes, the members of which are accustomed to residing in small spaces, social distances are usually smaller than in other groups. Assessment based on the descriptions of the crowd in literature, e.g.: Singer (2010) or photos of the Ashkenazi Jewish population (those of Eastern European descent, e.g. Bonisławski, Keller 2002), which once used to live in Lodz, correspond to that characteristic. The typical for the most of former Jewish towns and districts limited scale of outdoor spaces, narrowness of the passages and nooks, often even narrowed because of introduction of additional trade facilities also fit into this characteristics.

5. Perception as a factor influencing the creation of space

Strzemiński (1974) pointed at the evolution of the visual awareness along with the development of civilisation. The visual awareness was transformed together with the changes of the socio-cultural settings as it is, he noticed the result of economic and technical factors as well as the social structure proper for the given group of people, in the defined historical context. The notion of visual awareness, understood as the "cooperation of seeing and thinking" emphasises the role of cognitive absorption of perceived visual stimuli. Strzemiński (1974) identifies two ways of development of the visual awareness. In the rural cultures, it is the observation of the interior of an object, which finds its expression in the studies of nature. The second form was a silhouette vision, which developed from the primitive contour observation in economies based on hunting and breeding animals, that is in tribes accustomed to vast open spaces. The derivative of the silhouette vision was the perspective of simple parallel projection, and, in the further stage, the development of rhythm, including architectural rhythmisation, as a consequence of inclusion of the afterimage phenomena, natural for the perception processes taking place in vast open spaces. Another form of seeing, which was particularly apparent in communities, whose main occupation was commerce was seeing concentrated on ware attributes, with the emphasis on the texture and weight of objects, usually devoid of larger perspective. The preserved iconography, mainly paintings by Jewish artists contemporary to the development of the *shtetl* culture, confirms the assumption on their belonging to this group. The shape of urban settings analysed above also confirms the thesis about concentration on the content rather than on external appearance of activities and environment itself. Adorno (2011:5) points at the role of artworks as medium reflecting the unconscious aspects of culture: "*Artworks are afterimages of empirical life insofar as they help the latter to what is denied them outside their own sphere and thereby free it from that to which they are condemned by reified external experience*." The same refers to the urban settings, which perceived by the group of users answer their needs, including the aesthetic criteria.

6. Conclusions

Lévi-Strauss (1954: 137-8) describes the city as "*the most complex of human inventions*, (…) *at the confluence of nature and artefact*". The recognition of an area as belonging to a specific culture is an issue addressed by anthropologists, cultural geographers and urban morphologists – starting from Geddes (1904). The subject of investigations are the tangible results of social and economic forces, the

Małgorzata Hanzl
Technical University of Lodz, Poland

outcomes of ideas and intentions expressed in actions, which are themselves governed by cultural traditions (Vernez-Moudon 1997: 3). Experiencing of culture may be effectuated via examination of its influence on the physical form of the city: spaces of flows and built-up places. A number of features, listed above, confirm the influence of the presence of the Jewish community over the physical form of spatial structure.

The everyday uses of space constitute the most important part of activities analysed (Lawrence, Low 1999). Hillier (2009) defines the term of '*spatial emergence*' as *"the network of space that links the buildings together into a single system acquires emergent structure from the ways in which objects are placed and shaped within it"*. An important factor influencing the creation of social spaces is the way, they are perceived. The seeing awareness is the unconscious mental process, which allows for filtering out of what is seen including the culture related setting. The perception of images and the beauty canons remain culture specific, which refers also to the urban settings, directly influencing their shape.

Panerai et al (2009) propose a concept of habitus, which seams significant for the present considerations, and which assumes that urban structure, as reflecting the repetitions of social practices of everyday life, becomes the form of record of these practices. With time the recorded layout may become the contribution to the further continuation of the former way of use of space. Such situation happens also in Lodz, where in spite of important changes resulting from the new usage of the Old Town Market, despite the widening of some streets, demolitions and destructions of war and post-war periods, and the intensive car transit through the former Jewish district, the use of social spaces still remains to a large extent commercial, thus compliant with the one produced once by the presence of their former inhabitants.

Bibliography

Adorno T.W., *Aesthetic Theory*, Continuum International Publishing Group, London New York, 2011.
Alexander Ch., Ishikawa S., Silverstei M., *Pattern Language*, Oxford University Press, New York, 1977.
Bandini M., *Some Architectural Approaches to Urban Form*, in Whitehand J.W.R., Larkham P.J. (eds.) Urban Landscapes International Perspectives, Routledge, London 2000, 133-169.
Benedikt M.L., To take hold of space: isovist and isovist fields, Environment and Planning B, vol.6, 47-65, 1979.
Bonisławski R., *Magiczne Miejsca – Łódź*, Wydawnictwo Piątek 13, Łódź, 1998.
Bonisławski R., Keller S., *Lodz Judaica on Old Postcards*, Wydawnictwo Piątek 13, Łódź, 2002.
Conzen M.R.G., *Thinking about Urban Form, Papers on Urban Morphology 1932-1998*, Peter Lang AG, European Academic Publishers, Bern, 2004.
Cullen G., *The Concise Townscape*, Elsevier Architectural Press, Oxford, 2008.
Debord G., *Psychogeographic guide of Paris*, edited by the Bauhaus Imaginiste, 1955.
Dubos R., *A God Within*, Charles Scribner's Sons, New York, 1972.
Dylewski R., *Lubuski Orient*, in Scriptores nr 2/2003.
Ertel R., *Le Shtetl, La bourgade juive de Pologne de la tradition à la modernité*, Payot, Paris, 2011.
Friedman F., Dzieje Żydów w Łodzi od początku osadnictwa Żydów do roku 1863, Łódź, 1935.
Geddes P., *Civics: as Applied Sociology*, lecture at Sociological Society during a meeting in the School of Economics and Political Science (University of London), Clare Market, W.C., 1904.
Gehl J., Życie między budynkami Użytkowanie przestrzeni publicznych, Wydawnictwo RAM Kraków, 2009
Hall E.T., *The Hidden Dimension*, Doubleday, Garden City, New York, 1966.
Hall E.T., *Proxemics*, in Low SM, Lawrence-Zuniga D, The antropology of Space and Place, Locating Culture, Blackwell Publishing, Oxford UK, 2009, 51-73.
Hanzl M., *W poszukiwaniu śladów dawnej dzielnicy żydowskiej w Łodzi Vol.1 and 2*, Kultura Enter Volumes 38/9, 40/11, 2011.
Hanzl M., *Brzeziny pod Łodzią – analiza morfologiczna struktury urbanistycznej*, Przestrzeń publiczna i sektor usług jako element struktury małych miast, Conference Małe Miasta 2011, Wydział Geografii UŁ, Łódź, 3-4 Nov 2011, in press.
Hillier B., Hanson J., *The Social Logic of Space*, Cambridge University Press, Cambridge, 2003.
Hillier B., The genetic code for cities – is it simpler than we thought?, in: (Proceedings) Complexity in Cities conference. : University of Delft, Sept. 2009.
Jacobs J., *Death and Life of Great American Cities*, Vintage Books, New York, 1992.
Kempf P., *You Are the City: Observation, Organization and Transformation of Urban Settings*, Lars Müller Publishers, 2010.
Koter M., *Struktura morfogenetyczna wielkiego miasta na przykładzie Łodzi*, Zeszyty Naukowe Uniwersytetu Łódzkiego Series 2, 21 1979, 25-52.
Koter M., *Rozwój układu miejskiego Łodzi wczesno przemysłowej, in Miscellanea Łódzkie, Myśl urbanistyczna a rozwój przestrzenny Łodzi,* Zeszyt 1/1984, Muzeum Historii Miasta Łodzi, 54-82.
Kupisz M., Purchla J. (eds.), Reclaiming Memory Urban Regeneration in the historic Jewish quarters of Central European cities, International Cultural Centre, Kraków 2009, 301-324.
Lawrence D.L., Low S.M., *The built environment and spatial form*, Annual Review of Anthropology, Vol. 19, 1990: 453-505.
Lefebvre H., *The Urban Revolution*, University of Minnesota Press, Minneapolis London, 2003.
Lévi-Strauss C., *Smutek Tropików*, Wydawnictwo Opus, Łódź, 1992.
Lynch K., *Good City Form*, MIT, Cambridge, 1994.
Lynch K., *Image of the City*, MIT, USA, 1960.
Panerai P., Depaule J.Ch., Demorgon M., *Analyse urbaine*, Édition Parenthèses, Marseille, 2009.
Puś W., Żydzi w Łodzi w latach zaborów 1793-1914, Wydawnictwo Uniwersytetu Łódzkiego, Łódź, 2003.
Puś W., *Ludnosć żydowska Łodzi w latach 1793-1914 Liczebność i struktura społeczno-zawodowa*, in Paweł Samuś (ed.) Polacy-Niemcy- Żydzi w Łodzi w XIX-XX w., Instytut Historii Uniwersytetu Łódzkiego, Ibidem, Łódź, 2006.
Rapoport A., *The Meaning of the Built Environment, A Nonverbal Communication Approach*, University of Arizona Press, 1990.
Rossi A., *The Architecture of the City*, MIT Press, Cambridge, London, 1984.
Sitte C., *L'art de bâtir les villes, L'urbanisme selon ses fondement artistiques*, Éditions du Seuil, Paris,1996.
Spodenkiewicz P., *Zaginiona Dzielnica Łódź żydowska – ludzie i miejsca*, Łódzka Księgarnia Niezależna, Łódź, 1999.
Stefański K., Szrajber R., *Łódzkie Synagogi Wirtualne dziedzictwo "zaginionej dzielnicy"*, Dom Wydawniczy Księży Młyn, Łódź, 2009.
Strzemiński W., *Teoria Widzenia*, Wydawnictwo Literackie, Kraków, 1974.
Venturi R., Scott Brown D., Izenour S., *Learning from Las Vegas - Revised Edition: The Forgotten Symbolism of Architectural Form*, The MIT Press, Cambridge, Massachusetts, London, 2001.
Vernez Moudon A., Urban morphology as an emerging interdisciplinary field, Urban Morphology 1997, 1, 3-10.
Walicki J., Synagogi i domy modlitwy w Łodzi (do 1939 r.), Ibidem, Łódź, 2000.
Wesołowski J., *The Jewish heritage in the urban space of Łódź – a question of presence*, in Murzyn-Whitehand J.W.R., Larkham P.J., Jones A.N., *The Changing Suburban Landscape in Post-War England*, in Urban Landscapes International Perspectives, Whitehand J.W.R., Larkham P.J. (Eds.), Routledge, London, 2000, 227-265.
Whitehand J.W.R., Larkham P.J., *The Urban Landscapes: Issues and Perspectives*, in Urban Landscapes International Perspectives, Whitehand J.W.R., Larkham P.J. (Eds.), Routledge, London, 2000a, 1-19.
Whyte W., *The Social Life of Small Urban Places*, Project for Public Spaces, New York, 2009.
Wirth L., *The Ghetto,* Phoenix Books, The University of Chicago Press, Chicago, 1962.
Zborowski M., *Herzog E., Life is with People, The Culture of the Shtetl*, Schocken Books, New York, 1962.

Fig.1 Non-existing appearance of the central part of the old Jewish district contrasted with the contemporary figure-ground map
1. buildings in 1939, 2. buildings in 2010, 3. parcels in 1939, 4. parcels in 2010, 5. lines of frontages – 1939, 6. distant landmarks – 1939, 7. landmarks – 1939, 8. locations of different activities – 1939.

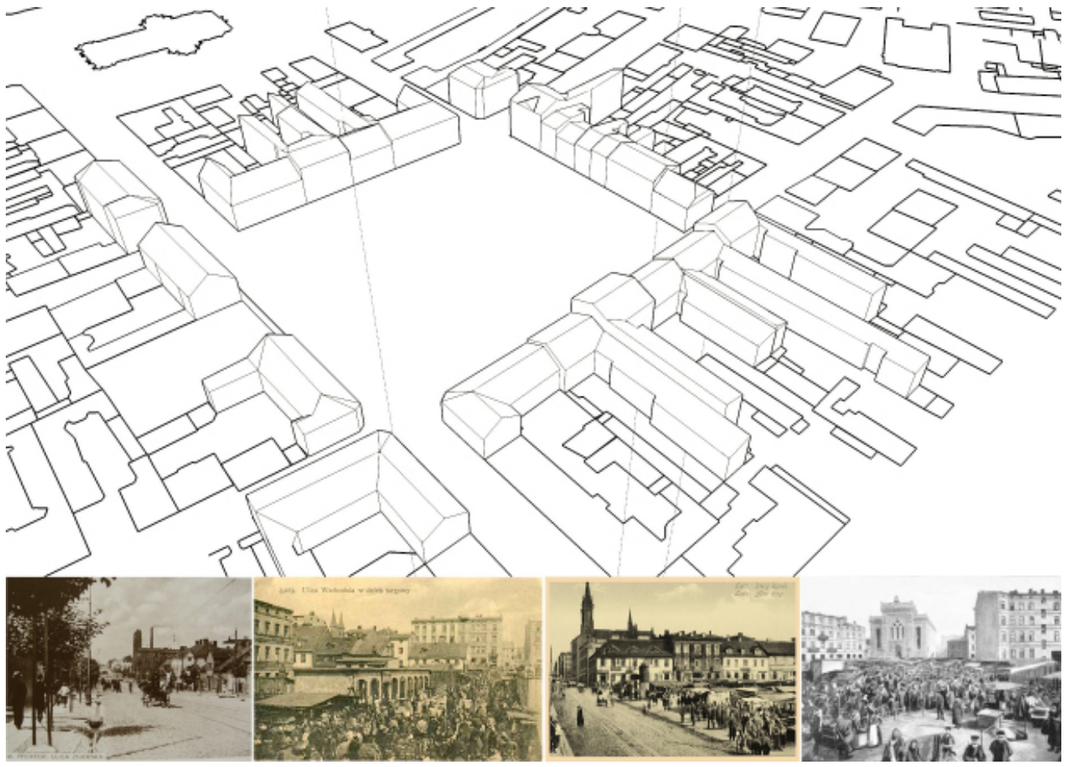


Fig.2 Hypothetical reconstruction of the model of the Old Marker direct neighbourhood basing on archive photographs and postcards. Photos: 1. Zgierska Street, between the World Wars, fot. W .Pfeiffer, an old postcard; 2. Wschodnia Street on the market day, an old postcard; 3.The Old Market 1914, an old postcard; 4. The view at the Alte Szil Synagogue, 1916, an old postcard .

Alessandro Isastia
Politecnico di Milano, Italy

Landing areas

Qui pense en termes d'objets ne rencontre que des fantômes.
Yves Bonnefoy.

Natural features, urban flows and urban canvas seldom emerge in significant spaces in recent urban developments, even if now acknowledged as a lively forces fields.[1] The lack of an encompassing theme/feeling in a territory/spatial condition to be enhanced makes buildings play solo parts in it: even if sometimes in a *virtuoso* performance or a dramatic anxious warped assolo, (Widler, 2000) their architectonic features act in a field of single singularities. It is not a problem of architecture, (or talented architects), but of contemporary spatial significance, eventually of culture. Humanities and arts have told a lot about the power of space or landscape set to objectify some existential subjective states. Philosophy's aesthetics are working out new instruments to describe a richer relation humans can have with the world we live in. How to define that richness and its interiority potential in order to make it a theme to develop? How can this be brought into perception into built space by different buildings with their own single voice?

1. Depths

The contemporary city seems to be made of lonely architectonic bodies parked in an abstract grid, wired, connected, and landscape packaged. Restoring sites to the wider physical context they belong to would mean recognize their extent of wideness and depth, so that the imagery and the sensitiveness the extent can recall can be activated and proportioned to human scale by built space.

a) Territory depths

The insistent use of the word *landscape* is nowadays a sort acknowledgement of impotence; landscape sounds like a prayer western civilization devotes to its territory, frightened by the difference it finds between all the images it has dedicated to it and its actual appearance. The word landscape appeared as the western civilization's gaze emerged from the territory, from its forces and symbols, its threats, its enchantments. That gaze has gained distance, making what used to be felt fade into a neutral scenario. This has granted a growing knowledge of natural mechanisms, but at the same time has placed human beings in a sort of exile.[2] The territory, instead of the living world it used to be, has eventually turned into a picture.[3]
Landscape is barely what actually appears, what results of a sum of actions on a land. Since ethics and aesthetics are linked, anything acting on the land taking into consideration its features, including the human feeling of that any measure laid on the world involves, will bring a tamed landscape. Most likely it will appear to be beautiful. As "*full of merit, yet poetically man dwells on this earth*" (Hölderlin, 1966) therefore we can ask and get much more than we now do to world shapes, elements and forces.
The capacity human beings have to enter in resonance with the world they live in is nowadays very underestimated. Getting back to the concreteness of our territories is not only a question of environmentally friendly behaviour or economic necessity; it's a cultural issue with huge wellbeing potential. I believe that some of human existential states can be objectified in spaces where natural forces or architectonic elements are shaped in tangible pervious places: can't a wide horizontality of immobile water provide the same quietness as some analgesic?

b) Human depths

Ancient religions dedicated a divinity to some of our emotional states, whose values where objectified in a piece of art or a space in some particular part of the territory. James Hillman encourages architects to awake from the anaesthesia to the awareness of the lively world, and says that the left out Gods persecute us as symptoms, reminding us that Jung said that the latter have become illnesses, adding that the illnesses that we suffer from are the return of what is repressed i. e., the gods our monotheism has forgotten (Hillman 2004).
As long as we talk about the territory using the word landscape, this mean that we won't have regained a deeper relation with the forms, the forces and the resources of the world. Landscape will always mean that we are still searching an aesthetical solution which will be elusive of all the interiority potential that can be objectified there.
Michel Collot writes that the elements of the territory have an "*existential and symbolic resonance*".[4] (Collot 2011). Impressions and feelings, as all emotional states, are invested in the territory, which thus becomes both interior and exterior".[5] "*The redefinition of conscience as "being in the world" presumes that it has a spatial extent. Notions as "a presence field", worked out by Husserl, or conscience field, as defined by modern psychology, involve its extent in the space as in time as well.*[6] As Frithjof Schuon wrote, the abolition of beauty is the end of the intelligibility of the world[7] (Ceronetti 1984). In that sense aesthetics has identified beauty with cognition, an objectivation of cognition (Bohme 2010).
Perhaps the new frontier to be explored is inside us. It is like as if we had to reinvent, imagine, even perhaps dream our relation with the world. As sacred spaces set the religious interpretation of some veiled aspect of life, can't we guess that the same relation might be as rich in achievements as the one that could be between science, psychology and arts? Characters belonging to different disciplines like a geographer, ("*a geography of senses, ideas of the world and of points of view;* Farinelli 2003[8]), a psychologist (Hillman 2004[9]), or an art historian (who proposes the creation, in the metropolis, of spaces where "*to meet, again, nature, where it lies, magnificent and indifferent, i.e., inside us";* Vitta, 2005[10]), encourage a deeper relationship between nature and our intimate layers.

c) Surfacing depths

Philosophers trough aesthetics somehow break the enchantment of words like beauty or dream, and by defining the poles of the relation between the human being and what surrounds him, provide some operational tools.
Ten years ago, Gernot Böhme published a treatise about aesthetics. (Böhme 2010) There he writes that "*a new aesthetic should enhance perception as the way the human corporeity shows itself, keeping into consideration that human beings are involved in the objects they perceive*". Moreover, "*as aesthetic of nature, it should define the relation between the surrounding features and human emotional states*". Bohme urges culture to investigate the emotional engagement into nature: "*When accessed by sensitiveness and bodily perception, nature appears in a special or significantly different way from when it does by scientific research?*" [11] [12]
Böhme grounds its aesthetic to the concept of atmospheres.[13] These are nor states of the subject, nor features of the object but are generated by the characteristics of the object: they are the relation between subject and object. Their character *is the way in which it communicates a feeling to us as participating subjects.* (...) Atmospheres "*unify a diversity of impressions in a single emotive state*. (...) Atmospheres, to be sure, are not things." (...) But, "*however, the quasi-objectivity of atmospheres is demonstrated by the fact that we can communicate about them in language*. (Böhme sd). The issue of language is crucial. It is the key to share a reinterpretation of the territory.[14]

2. Words and space

A new cross-disciplinary representation of the land, guessing relations between the territory palimpsest and human interiority, would surpass the landscape aesthetical attitude. A pre-definition of the expected spatial result, not as volumetric definition, but in term of spatial meaning, should be provided, so that all the players can then interpret it with their tools, their sensitiveness, their voice, their touch.

a) Presence and distance

A sensible object distinguishes itself from the abstraction of the concept by the act of its présence, writes the French poet and essayist Yves Bonnefoy. As the architectonic body stands on that very space, it will define what kind of space it is. Presence involves a wider space, as its act happens somewhere, in the way that very site allows to happens with its features.[15]
The tension between a site, a situation and its far extension is what I have called space outcome.[16] It is what the French essayist Michel Collot has first called in poetry *the horizon structure* and has recently tried to transpose it in landscape in his latest book, *La Pensée-paysage*[17](Collot 2011). What is at stake is the openness potential to further physical or ideal dimension a spatial set must have in order to be a place. Seen in the urban context, I recall the of Thomas Sieverts's suggestion[18] that a new urbanism should aim to reveal the city cosmos, the intelligibility of its structure so that the *Zwischenstadt* may ripen to a full stadt. (Sieverts 2003)
The issue of the space is fundamental: as long as the shape of the built space, no matter if architectonic or urban, is not asked to vehicle or make presence of dimensions beyond its mere geometrical, measurable ones, (as it has been in western civilization, not to say in eastern ones), we will only have space as raw material with lonely architectonic volumes in it.

b) Landing areas

Landing areas are to lay a hope on our territories. A hope that their living forces, their shapes, their horizons might fall into designed spaces where interiority states can be objectified. The available fragment of the territory, would somehow work as a contemplation site, in its local peculiarity and uniqueness, with the very elements there available. This could be a beginning of the quest for metropolitan cosmos, starting from its basic and necessarily shared living layers and elements: soil, waters views, horizons... Nothing new, apparently, but a layout of solid and void in which horizontality/verticality, weight/lightness, openness/seclusion, density, rhythm, chiaroscuro, colors, orientation are conceived together in order to embody the territory-interiority relationship. This would prevent from having lonely standing volumes and geographic features aesthetically conceived, as a scenario. Will be poetical interpretation of places acknowledged as a working geographic feature?
Landing areas would require the inversion of solid/void, which implies the primacy of space upon the object. In that vision, space, (predefined space, originated by the interpretation of the territory features), is what should introduce the main existential dimension, which the solids/volumes (or whatever in-between in term of density) play with, by their own architectonic elements, their own identity. We could have what is its structure for music in urban design. I would imagine that the elements of a determined place might suggest a main *stimmung*, a main state, a main existential dimension that could be represented, for example, as a basso continuo, or on the contrary, with a series of accents, or perhaps only one, a verticality, or again a long note.[19] The other voices (=architects, buildings), could then play with it either in accordance or contrast. What is fundamental is that the theme becomes perceptibly developed, both as art and real estate.
The building/s scattered in a significant space through the landscape are an old dream of architecture and urban planning: a somehow dormant stream of thought that, in the light of the possibilities revealed by figurative art and technological progress of the twentieth century - first with the urgency and enthusiasm of the reconstruction and then with cyclical phases of resurgence – announced a new spatiality: the sculptor Arturo Martini's "*new dimension*" (Martini, 2001), Le Corbusier's "espace indicible", the critic Ignasi de Sola Morales's "*espacio débil*", (Sola Morales 1996), all of them have the ambitions to renew plastic art and, first of all, architecture with the inversion of solid/void.
That vision still awaits a society to build it.

c) Words: states/acts/conditions
I mention here in after some acts of presence. These are acts happening in a place. The fact of being place outcomes from the identification of the territorial elements performed by the acts playing with it. These acts are to be functional to the significations territorial elements might carry. So they are media between the place and its given significations that should be felt/recognized by our interiority. Built pace, whose nature/quality is defined by the way architectonics element act in it, is therefore an instrument to open a site to the ontological values.
– The act of suspension like a halt, a momentary retreat from a dynamic context.
– The *immobility* as miraculous steadiness, most likely in absence of weight;
– A *duration*, as a mute horizontal steadiness that stresses the horizontal presence of an element.
– The act of abandon, (either to the flow of a stream, to a slope, or whatever other tension) implies a distended location; it's the feeling of being carried. In the case of a stream of water, the symbolic implications have been already diffusely described;
– A *widening* is like a largo in music, a relaxation, an opening;
– The act of *tossing*, as the feeling of surfing, on taking movement from the tension of a steady site.
– The fall, a vertigo, a void that magnetically attracts the surrounding place;
– *Finiteness/infiniteness*: a huge ontological theme that has some of its highlights in the romanticism and it is well known by poetry.[20]
– *Remoteness*, as working with the perception of a distant element, and all that can be guessed in between. The remote element might be seen as either a hope or a promise.
Will we be able to make the territory accomodate the states listed with its features? Somehow it is a sort of sublime category, which fortunately doesn't need any breathtaking views or spectacular scenarios; they can be ordinary ones, made breathtaking by the unveiling of its forces and shapes into space.
A design team could reach some high goals, melting the poles of the territory structure, its poetical interpretation, imagery and representation,[21] its economical feasibility as real estates. The anthropologic and psychological values that landscape can carry might reach a deeper cultural level and a cross-disciplinary unity, beyond the ones felt either by the architect or the urban planner.

3. Milan: landing areas

In the example of Milan, the landscape potential is just the wide plain, its which that only the running waters are able to make perceptible, and the bright iridescent Alps in background. The first evokes all the feelings, symbols and categories linked to unlimitedness, infinity and horizontality, the second everything about waters and its different shapes, the third the distance, the remoteness. This is the poetic field. Once suggestions about its sense and what shared feelings can be carried arise, architects and planners can be asked to give it a shape, a rhythm, a spatial outcome.

a) Unlimitedness, infinity and horizontality

The plain is horizontality. It was an horizontality religiously devoted to the sky, then just an availability of space. Could the city of Milano afford any representations of that immensity, that vastness, or even an adumbration of infiniteness? To make room for a potential, for a generous wideness, for the originality of its territory, that could be linked to sunrise and sunset eastwards and westwards? It is about not a cleared and flat horizon line, but a spatial dimension that, in the plain land, might suggest it.
This mere flatness can be seen as rhythmic *wideness of sky* in the main cloister of the Pavia Chartreuse, as *horizontality* at Cusago castle, in the Bicocca pavilion and the Alfa Romeo headquarters, as *surface of emerging streams* at the Fontana sanctuary and Porta Garibaldi railway station (both in their original design) as *fading indefiniteness* at Belgioioso villa's garden in Merate, and at the garden stairs of villa Reale in Monza, and, potentially, *as remoteness* in Milan's Pavilion of Contemporary Art.[22]

b) Shapes of waters

Water flows tell about the inclination of the plain. They are either free and roving, or the slow stream of a channel, or a huge mass kept by a dam (before it finds a waterfall). As spring water it tells about the layers of the plain, the sand, the gravel, the clay. There can be an architecture of the water shore, as it can be seen, lying with the peculiar rhythm of its windows along channels. A new one, could have concrete light slabs reflecting the arabesques of the slow stream into the apartments...

c) Bright remoteness.

The alpine chain shows itself as a varicoloured mass remoteness; almost always bright, as it faces south. It stands above the metropolitan area, suggesting emersions or openings on distance from the city density.
So these are the resources, not to mention what belongs to urban fabric. And I am sure it is needless to ask if it might be interesting to have indefiniteness, remoteness, emerging streams and horizontality as spatial experiences in built space. These could be the fragments of that cosmos Sieverts aimed to reveal, that uniqueness of that very city.
And what is to be associated to indefiniteness, remoteness, emerging streams, horizontality as psychological/social states might certainly be an interesting task for humanities researchers. It would be a challenging process and, perhaps, a new deal in urban design. As for the medieval cathedrals, the meaning of the place should be first clear; then how to make a spatial experience of it, and with which shape, it will be part of the process.

Bibliography:
Bonnefoy, Y., *L'Arrière-pays*, Gallimard, Paris, 2003.

Bonnefoy, Y., *L'improbable et d'autres essais*, Gallimard, Paris, 1992.

Böhme, G., *Atmosfere, estasi, messe in scena*, Christian Marinotti Edizioni, Milano, 2010.

Böhme, G., *The art of the stage set as a paradigm for an aesthetics of atmospheres*, sd, http://www.cresson.archi.fr/PUBLI/pubCOLLOQUE/AMB8-confGBohme-eng.pdf.

Ceronetti, G., *Viaggio in Italia*, Einaudi, Torino, 1984.

Collot M., *La Pensé-paysage*, Actes Sud/ENSP, Arles, 2011.

Corner, J. (edited), *Recovering Landscape*, Princeton Architectural Press, New York, 1999.

Descola, P., *Par-delà nature et culture*, Gallimard, Paris, 2006.

Farinelli, F., *Geografia*, Einaudi, Torino, 2003.

Hillman J., *L'Anima dei luoghi,* Rizzoli, Milano, 2004.

Hölderlin F., I*n leiblicher Blaue..., Poems and Fragments*, Routlegde and Paul, London 1966.

Isastia, A., *Lo spazio e il suo esito*, Phd thesis, Politecnico di Milano, 2010.

Le Corbusier, *L'espace indicible*, 1945, manuscript. (http://pedagogie.actoulouse.fr/philosophie/forma/corbusierespaceindicible.rtf)

Martini, A., *Primi Aforismi in La scultura lingua morta*, Abscondida, Milano 2001.

Sieverts, T., *Cities Without Cities: An Interpretation of the Zwischenstadt*, Spoon Press, London, 2003.

Sola Morales, I., *El espacio débil in Diferencias - Topografia de la arquitectura contemporanea*, Editorial Gustavo Gili, Barcellona, 1996.

Vitta, M., *Il paesaggio*, Einaudi, Torino, 2005

Widler, A., *Warped Space; Art, Architecture and Anxiety in Modern Culture*, MIT, 2000.

Notes

[1] It can be surprising that the best we can obtain where there is some landscape potential, as for example a river or sea, will be a designed waterfront with volumes behind it. Instead of the space of the river stream, there often will be a sculptural building to give some outward identity to the place, as the other volumes and the water, (and the volumes between each other) will only have proximity or view relation.
[2] see the works of Philippe Descola, Anthropologist.
[3] It seems that this exile never ends, the technical progress continuously supplying devices to make a loose relation more tangible, from painting to photography, colour photography, to virtual reality. Collective imaginaries propose worlds where space and architecture are surpassed either by virtual reality or a definitive fusion with nature forces. The Matrix (1999) suggested we could have a sort of life experience detached from our body, while Avatar (2009) proposed a sort of wired reconciliation with the forces of the natural world with a significant human physical structure upgrade to be able to give up any shelters.
[4] M. Collot reports the ideas of the geographer A. Berque, p.30.
[5] ibidem p.29, my translation.
[6] ibidem p.35, my translation.
[7] Ceronetti 1984, p. XI, my translation
[8] Farinelli 2003, § 99
[9] Hillman 2004, p.36 and 104
[10] Vitta 2005, p.320-323; my translation
[11] Bohme 2010, p.56, my translation
[12] As anthropology is trying to melt the poles of nature and culture, we intend here aesthetics of nature as the ones of the perception of tangible world, including either primeval forests as urban concrete parking lot. See Descola 2006.
[13] Bohme 2010, p.55, 64.
[14] Evoking potentials, guessing pre-definitions and describing territory elements and the role they might have is mostly a task for language. But very often the object words define remain sealed in its concept. The risk is that the expected spatial outcome might works like a caption; what was supposed to be embodied, ends up to be just entitled. This is why the bodily or perception experience is so important to build a significant set and not a scenario.
[15] The simple action of putting a foot on a soil means identifying that very soil, its extents (where this soil ends and a different one begins ?), it geometry (is the foot horizontal or inclined? If inclined it means that the sloping soil; where does it takes ?). And so on, about its composition, structure, layers, views from it...
[16] Isastia A., Lo spazio e il suo esito, phd thesis, Politecnico di Milano, 2010: http://opac.biblio.polimi.it/sebina/repository/link/oggetti_digitali/fullfiles/PERL-TDDE/TESI_D02519.PDF
[17] Collot 2011, p. 91 and 187
[18] Sieverts 2003, chapter 2
[19] The memory recalls a famous building in Berlin Siemenstadt, by O. Bartning, known as the long lament.
[20] Giacomo Leopardi, (1798-1837) His poem, The Infinite opposes the intimacy of a secluded space with the horizon it opens to. (http://allpoetry.com/poem/8527635-The_Infinite-by-Count_Giacomo_Leopardi)
[21] Corner 1999, chapter 10, Eidetic operations and New Landscapes.
[22] Isastia 2010, Chapter 2, and note 15.

Captions

The Alps from Milano in an infrared postcard of the thirties. Their proximity has been an urban vista from the eighteenth century to the second half of the nineteenth.

Susanne Komossa - Nicola Marzot - Roberto Cavallo
Delft University of Technology, Holland

Groundscrapers
Vitalizing the tradition of the urban low rise, mixed hybrid building

Introduction
The fact that hybrid buildings can be interpreted as extremely condensed urban blocks, increasing the city's density and contributing to its public realm, forms one of the key interests of this research. According to its European interpretation, the "ground scraper" is not only public because of the character of its plinth facing the street, but also due to its interior space, partly accessible to public. As such it potentially extends the city's public domain, horizontally and vertically, into the building's interior and links the public domain inside and outside. Basically it acts as a city within the city.

Today's necessities
Today, new readings of the city, like the "compact city", ask for innovative interpretations and designs of building types.
Contemporary cities, due to limited energy sources, need the development of sophisticated low energy public transport systems. Therefore highly congested multifunctional spots arise close to traffic junctions. As a consequence, the wish to increase the city's liveability asks for densification of the existing fabric and stacking of functions, often in combination with infrastructure, at least in the Netherlands. For all these reasons, the architectural type of the hybrid building because of its potential quality of stacking different functions is certainly an option worth researching, particularly as a way to condense the urban block. Moreover, the urban economist Edward Glaeser states in his book 'Triumph of the city' that successful cities of the future should condense in order to encourage face-to-face contact and to facilitate innovation by bringing together different people with panoply of ideas. Next to it, cities need to be greener, reducing the use of energy involved in transportation (distances) as well as the exceptional energy use of urban sprawl.

Hybrid Typology
In regard to hybrid's typologies, Joseph Fenton distinguishes three basic types: the fabric hybrid, which derives directly from the structure and measurements of the surrounding urban fabric. The outer performance and composition of the fabric hybrid within the city tissue can vary from being as distinguishable part of the urban block or expressing and composing a whole block as urban unit.
The graft hybrid consists of a combination of different building forms within an urban block It can also present itself as a unity that articulates the different functions of the building in the exterior.
The monolith hybrid is usually a high-rise structure. The monolith hybrid carries a unifying skin and stresses the block's unity even more than the fabric hybrid.
All kinds of combinations between these three are thinkable.
Joseph Fenton remarks referring to the American context "… The combination of multiple functions within a single structure is a strategy which has been repeated throughout history… However, it is crucial to stress that hybrid buildings stand differentiated from other multiple function building by scale and form. The dimension of a city block within the orthogonal grid determines the scale. The form is a direct result of the late Nineteenth Century technological innovations such as structural framing, the elevator, the telephone, electrical wiring, central heating and ventilating systems…The hybrid type was a response to the metropolitan pressures of escalating land values and the constraint of the urban grid…".

Dutch Hybridism
Already in the 17th century the building for the First Stock Exchange in Amsterdam (1609) was located on top of the water of the Rokin due to the lack of space in the fortified city. In the heart of the city, it stacked a diverse program consisting of infrastructure and commerce. The inner court, where the goods were actually traded, supplied the city with a completely new public realm where citizens could meet.
At the end of the 19th century and the beginning of the 20 th in Rotterdam, the new urban hybrid buildings like the shopping arcade at the Coolsingel and the Hofplein Station represented the embellished civil engineers' city, rendering the urban and architectural designs for the new middle-class public sphere in the great Dutch cities. Usually these buildings were – again due to the lack of space - located at the edges of the historical centre in the areas of the former fortifications, which had been dismantled in the middle of the 19th century.

The Hofplein station brought together a hotel, the famous Café Loos and the train that connected all the Rotterdam attractions with the inhabitants of the hinterland. Again panoply of disparate functions, as in the case of the Hofplein Station, and infrastructure were integrated.

The Atlantic House (1928) as the 'head' of a perimeter block facing the Veerhaven in the Scheepvaartskwartier (Shipping district), introduces an innovative arrangement of commercial and office spaces, accessible from beautifully designed galleries at the inner court of the block.

More recently, the ultimate results of the block transformation aim at combining the qualities of the traditional horizontal building fabric with the vertical layering of repeated artificial entresols, encompassing both public and private functions to enhance urban congestion and building density. Often these buildings replace existing buildings in order to gain space by condensing the existing urban tissue .

Dutch Hybrids inspired by European and American examples: GROOT/GREAT in Rotterdam
To begin with, the city of Rotterdam formed the first test case of the Hybrid's project to document and discuss statements.
In order to understand the specific and local nature of hybrid buildings within the city of Rotterdam, a series of the city's 'great buildings' were selected from different periods, ranging from the 19th century till today, proving their grandeur during the past and relevance for the city's public realm

The urban conditions of the modern city have created unique opportunities for the realizations of hybrid buildings. Because of its size and relatively modest population, the compact Dutch city did not immediately experience the new urban conditions of other European modern cities like London, Paris, Vienna or Berlin.
However, particularly the case of Rotterdam deserves extra attention. Due to the explosive expansion of its harbours, the city developed enormously during the second half of the 19th century, quadrupling its inhabitants from 90.000 in 1850 to 400.000 in 1900 . For this reason the city was constantly the theatre of new ambitious projects, often accompanied with the strong wish to catch up with other European metropolis.

Shopping arcade: 'Passage' at the Coolsingel
Although roofed shopping complexes are all referring to the typology of the Bazaar, the shopping arcade as covered street for pedestrian finds its origin in England and was exported at the end of the 18th century to France, Italy and Germany . The strong spatial relationship between the building and the inner street makes this type suitable for the combinations of several functions. The 'Passage' building, also called 'Galerie', is one of the new 19th century building types in which the urban block is opening up its interior to the public life. At the same time, by stretching out the shops to the inside, the spatial use of the block is increased, especially on the lowest levels.

This hybrid building par excellence found its Dutch variant in Rotterdam, from the hand of the architect Jan Christiaan van Wijk. The Rotterdam 'Passage' (1879) was built in de walking route between the Binnenweg and the Hoogstraat -at that time the shopping street of Rotterdam- in front of a new bridge connecting with the quickly expanding western side of the city. The program contained 28 shops with housing, 56 residential, hotel, grand café, an indoor market and a beer cellar with aquarium. The Coolsingel Hospital, very close to the passage, was also a major attracting point contributing to the influx of visitors.
Also a luxurious public bath, including steam, electric and rain baths was located in the Passage building. The Passage was a very modern building, including extensive ventilation and cooling system. Already one year after construction, experiments were made with electric lighting.

Unfortunately the complex was destroyed by the bombing of May 1940.

Train station: Hofplein
The advent of railways in the modern city offers great opportunities for the design of hybrid buildings. G. Somers Clarke made in 1862 a design for the combination of Rotterdam Central Station with a hotel . The project was never realized but was a remarkable milestone in the discussion about the construction of stations in the city.

The Hofplein line was also the first electric railway in The Netherlands. The line had on the Rotterdam side a remarkable semicircular terminus station built in 1906 and designed by J.P. Stok. Café Loos took the biggest part of the station building. The combination of station, café and plaza promoted the area as nationally known spot for nightlife and entertainment. The station building was destroyed by the bombing of May 1940 but viaducts as well as train platforms remained intact and a new station designed by S. van Ravesteyn was realized in 1957 , but unfortunately demolished in the early 1990s during the construction of Willemsspoortunnel.

Rotterdam Stock exchange building
In 1913 the municipality decided to build a range of representative buildings along the Coolsingel, demarking the former fortifications. Next to the town hall and the main post office, also the new stock exchange building had to be located on this new urban boulevard. As the planning of the town hall was considered more urgent, the competition for the construction of the new stock exchange building was organized as late as 1926.

Staal wins the competition in the second round under the slogan 'Thermidor'. The jury expressed great appreciation for the proper interaction between building and surroundings and for the various program components. By placing rentable spaces next to the office program, Staal created the possibility even for future expansion.

Office typologies: Courts and galleries
The Atlantic Huis (1928) in Rotterdam follows the typological example of the
Bradbury Building, the oldest commercial building in downtown Los Angeles (1893). Both buildings can be typified as 'fabric hybrids' according to Fenton. In regard to their internal composition and section, they introduce inner galleries on all floors surrounding a light court. In fact they both extend the public realm of the street into the buildings' interior courts and galleries.
The impressive Atlantic House in the Scheepvaartkwartier of Rotterdam is one of the first buildings in the Netherlands that collects different firms under one roof, grouped along galleries around an inner court. The firms share collective spaces like an entrance lobby, indoors parking, paternoster lifts, archive spaces in the attic, sport facilities in the basement, maintenance and security. A perfectly regular concrete column structure allows free division and changing arrangements of the office spaces on the upper floors. Only the main lobby, galleries and tower spaces on the corners of the building are 'fixed' spaces.

Interior Streets
Also the Groothandelsgebouw (1953), similarly to the Merchandise Mart in Chicago (1930), belongs to the species of courts and galleries, but in a specific way. In this typology the access system becomes independent from the light courts. In fact, galleries were transformed into inner streets.

The Groothandelsgebouw is an icon of post war reconstruction in Rotterdam, next to the 'moved' and off-centred central station . Because of the bombing of the city centre during World War Two, 388.000 m2 of working and shopping floor area was lost. Individual entrepreneurs and smaller firms were not able to finance and re-built the lost space. In 1944 the idea rose to build one big building following the example of Merchandise Mart in Chicago, which brought together a great number of businesses. Nevertheless, in Rotterdam the Groothandelsgebouw was collectively financed and owned by shareholders.
The design by Maaskant and Van Tijen became the biggest trade building in the Netherlands with 3 inner courts and interior streets measuring 1,5 km, all together connecting a floor area of 445.000 m2.
Next to shops and office spaces, the building contains space for wholesale companies, indoor parking, a bank, a post office, rooms for meetings, restaurants and a cinema on the public roof-scape; even a truck was able to enter the building delivering goods on the first floor. In the cinema, after the film performance, the movie screen could be lowered, offering to spectators a marvellous view on the city from the 9th floor.

The building is completely constructed out of concrete, again featuring a regular column grid. The facades are composed of prefabricated casted-concrete elements, which are detailed like a filigree screen.
One main entrance lobby and four sub entrances give access to the interior streets and the roof-scape. Around the uncovered interior courts a second gallery system is added which supplies a series of office spaces with a second entrance.

Urban Block morphological transformations
To appreciate the ultimate Dutch hybrid developments it is fundamental to define the term Morphology as it is used in Architecture and Urban Design: it describes the process according to which a building configuration transforms itself adapting to new conditions and the related requirements. Typology identifies the different stages through which the transformation process reveals itself via unstable phases.
Because the morphological process as such never stops, and building systems constantly perform their adaptability to transformation themselves, the identification of building types is conventionally assumed as existing.
In addition, the morphological process can never been forecasted, because it is impossible to predict the on-going flow of economical and social conditions, which affect it. A certain extent of predictability could be assumed if one accepts the preservation of the original language, or set of rules, due to their wide inner potential. This is the case of the urban block, up to the second half of the 19th century in both America and Europe.
In fact, a former major change occurred when the original inner core of the block systematically shifted from the private individual domain to collective or public neighbourhood control. In some cases, the inner court was also covered, letting new residential and public buildings appear.
Later, more radical transformation occurred when, due to technical and material advancements - i.e. the introduction of steel wide spanning structures, electrical lighting systems and elevators - it was suddenly possible to substitute and combine the traditional horizontal experience of the urban block with vertical movement.

Recent hybrids
Neutelings & Riedijk, Müllerpier Apartment Block, 2003
Being part of the Müllerpier Masterplan by Kees Christiaanse/ KCAP, this proposal shares the urban design strategy of the Collage City. The main idea is to interpret the unused Pier transformation as a patchwork made of building fabrics in the shape of morphologically autonomous but spatially related urban architectures.
Neutelings & Riedjik assume the assignment, encompassing a wide range of functions -housing, restaurant, swimming pool, wellness and medical centre, parking lots- into a covered and stepped urban block of highly sculptural impact.
The block itself combines two typological hypotheses. The cross section reveals its precedents in the balcony like covered urban block, with a consistent tradition in the 19th century European city, rooting the twofold dwelling curtains into a public podium and connecting it to the outside. The longitudinal section, emphasizing the stepped profile lowering down onto the Maas River, gives rise to the multilayer consistency of the building, almost nestling the public into the private. The combination of the two enhances the idea that private and public domains are two instable polarities which are reciprocally identified through a continuous negotiation, counteracting any idea of hierarchy or subordination of the former to the latter in the contemporary city.

MVRDV, Markthal, 2014
New national regulations, introducing strict limitations to outdoor selling and consumption of fresh food, gave rise to the new market hall as a solution for the Blaak's popular weekly open market The main functional requirement is enriched and implemented by combining it with dwellings, commercial activities and underground parking. Making explicit the use of a mega structural language, letting the bearing system being inhabita-

ble with balcony like typologies, its cross section is a combination of two clear precedents: the covered urban block, whose edge curtains host dwellings and internally housed public functions, and the previous International Fair Hall and Railroad Head Station, probably as an indirect homage to the proximity of the Blaak station, showing a stepped back profile combined with the shopping mall plinth. The ambiguous relation between the private exterior and the public interior produces a hybrid atmosphere, where again horizontal and vertical connections are combined.

OMA/Rem Koolhaas, De Rotterdam, 2014
The complex is part of the Wilhelmina Pier transformation. The area is the former terminal of the famous Holland America Line, from which the Dutch immigrants used to leave their native land to join New York. Nowadays it hosts a luxurious residential district.. OMA/Rem Koolhaas aim is to perform on the Pier the high congestion qualities formerly discovered in New York, but also to establish a metaphorical link to the Atlantic Ocean's two-sided connection. The design tries to combine the horizontal quality of the European block, which hosts the most public facilities such as congress and fitness centre intertwined with parking, rooting the complex in the pier, with the vertical quality of the high-rise buildings, each of them used differently as hotel, offices and dwellings. As a tribute to their geographical Patron, the parts are literally grafted upon the common plinth, matching in an unexpected hybrid solution.

Common aspects
Comparing the different exemplary solutions, it seems that Rotterdam is consciously experimenting with new proposals to enhance urban congestion, combining the international high-rise development with a more local concern for the traditional public/private relationship, where the city block pattern plays a crucial role as an actively gluing interface.
Leading the public inside the building curtains, and letting people flow between the private functions without loosing the relation with the street surface level, seems also to be a common base to solve the potential conflict between the horizontal and the vertical city profile. In addition, research for hot spot junctions of the infrastructural network appears to be another facilitating condition for success.

Conclusion
In order to document, analyse and compare historical and contemporary representatives of the hybrid species, we developed a special way of drawing. The method includes panoply of scales ranging from the morphological arrangement on the scale of the city and the surrounding urban tissue, a comparison in size of the facades as well as footprints, and axonometric drawings that show the way in which volumes and functions are stacked. As a result, main typologies can be detected, especially in the transformation of the urban block. They can transform slowly due to the spatial arrangement of the city, for example the lack of space within the fortified city, and economical needs like the recent call for densification. Types once developed for an urban context within a specific historical period, can reappear in another. Moreover, they evolve in unexpected ways. Detailed sections document the way in which diverse spaces are stacked, visualising the building's typology or combinations of typologies. Basically the features analysed within the series of drawings are also the categories to be taken into account for every future hybrid building. The drawings allow detecting the models and rules that are constitutional for the groundscraper as a hybrid urban block. At the same time the research guides a design practice build up on research of typology, morphology and the everyday use, to stress once again the relationship between architecture and the city.

Notes

[1] Edward Glaeser, Triumph of the city; how our greatest invention makes us richer, smarter, greener, healthier and happier, London, Macmillan, 2011. Edward Glaeser's research is acknowledged highly inspired & influenced by the writings on (the economy) of cities of Jane Jacobs

[2] Joseph Fenton, Steven Holl; Hybrid buildings; in: *Pamphlet Architecture No. 11*, New York, San Francisco Princeton Architectural Press 1985

[3] Joseph Fenton, Steven Holl; *Hybrid buildings*; in: *Pamphlet Architecture No. 11*, New York, San Francisco Princeton Architectural Press 1985, p.5

[4] This is especially the case in Rotterdam. The morphology of the after war reconstruction of the city centre is – as known – based on CIAM principles that is not only characterized by a division of functions and priority given to transport, but also to a low gross floor area rate (FSI). See also: Meta Berghauser Pont, Per Haupt, Spacematrix, Space, Density and Urban Form, Rotterdam, NAI, 2010

[5] For more information see H. Engel, *'Randstad Holland in kaart'*, article in *OverHolland 2*. Amsterdam (Sun) 2005.

[6] N. Pevsner, *A History of Building Types*. London (Thames and Hudson Ltd) 1976, p.257-272.

[7] H. Romers, *Spoorwegarchitectuur in Nederland*. Zutphen (Walburg Pers) 2000, p.25.

[8] P. Saal & F. Spangenberg, *Kijk op stations*. Amsterdam / Brussel (Elsevier) 1983, p.101.

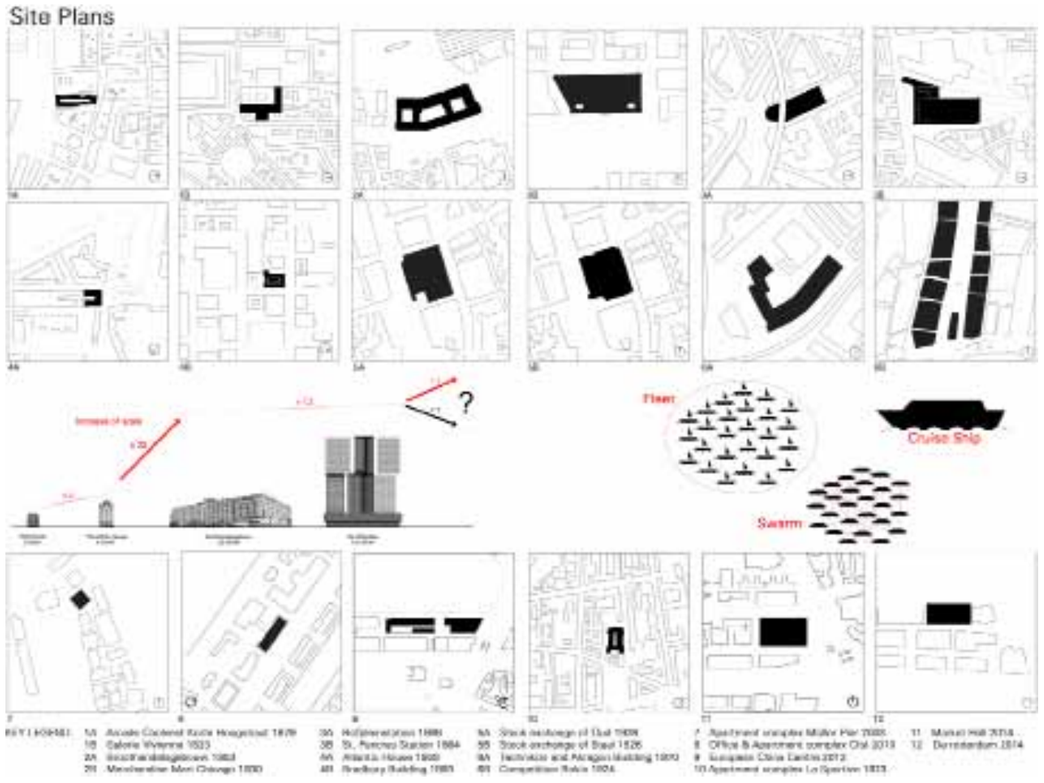
[9] The Atlantic House is designed by Piet Buskens and commissioned by W.A.M. Daniëls en H.F. Kerstens. The program enhances sops, a café, a workshop, a parking garage and offices on 1750 m²

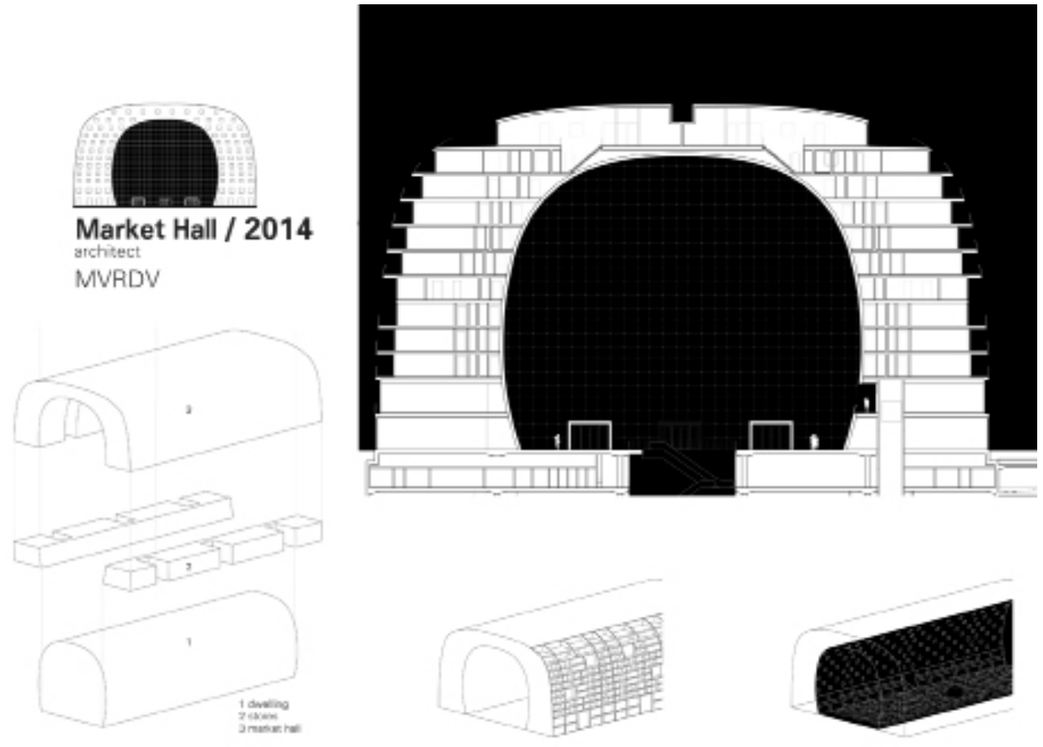
[10] The initiative for the Groothandelsgebouw was taken by the businessmen Frits Pot en Cees van der Leeuw who is also known as the commissioner of the Van Nelle Factory. They established a business association that actually commissioned the building.

[11] It took long for the building (and the central station) to settle in the urban tissue. More or less as late as today, 65 years after the war and an enormous amount of building, the density of the surrounding urban tissue and use is high enough for the gigantic building to fulfill its 'central' role.
The research theme is developed by the Architecture chair of Public Building (Susanne Komossa, Nicola Marzot and Michiel Riedijk) and the chair of Typology (Roberto Cavallo), Faculty of Architecture TU-Delft in active collaboration with Francesco Cinquini (University of Pisa) and Derk Hofman (TU-Delft), Job Floris and Froukje van de Klundert (Academie van Bouwkunst Rotterdam/ Monadnock), Arie Lengkeek and Jos Stoopman (Architecture International Rotterdam - AIR).

Captions Illustrations:
01 Rotterdam, historical twins & new kids on the block, morphological foot print, 1:16.000 (TU-Delft) and Schemes 'Increase of Scale' and 'Cruise ship & Fleet' (Theo Deutinger, TD Netherlands Austria)

02 A way of drawing & analysing, MVDRV Market hall (2014): Section, Façade, Axonometric View, Inner View, Exploded View





New Element of Settling (NER) as Search of Future City

Context.

In the mid 1950[es] life in Russia significantly changed. The rigid Stalin's governing was getting a thing of the past. Period of so called "Khrushev's thaw" and "Khrushev's minimalis" comes. Architectural style began to change abruptly. "Proletarian Classicism", founded on the order, was officially disaffirmed. Mass construction of typical featureless panel five-storied buildings began. It was actually social revolution. It was complicated to buy an apartment. But State offered apartments free. (Till nowadays a great number of Russians is living at the apartments received at that period). But architects were in difficulty. They should obviously take Western Functionalism side, but full value information on it was absent. There were neither books, nor magazines. In that period practically entire pedagogical staff of Moscow Architectural Institute consisted of masters of Stalin's Classicism epoch. They were professors of high level, shown themselves good practical architects, but not familiar with Modern Architecture. What a subject in such a situation could be taught? Hard pedagogical times become.

In that time we studied at MARCHI and came to diploma. Students made up their minds to accept the Modern Western Architecture, but it was not taught at the institute. It was hard to find information even on Soviet Constructivism. In such a situation in 1959 a group of students decided studying the whole architectural problems spectrum independently. Aleksey Gutnov was ideological leader of team collected by fellow-members of course. Rector was former well-known constructivist — Ivan Nikolaev. He needed creative students and gave us active help. First thing we made was preparation of informational reports about activity of entire leading architects of that time. We collected materials, made slides, organized exhibition and prepared reports. Everything was made with big difficulty. It was a sensation. Names of Le Corbusier, Mies van der Rohe, Wright, Gropius and Niemeyer were heard after many years of oblivion. Entire interested persons could not be placed into the hall. Communist Party local bureau was indignant with such a fact: "This is undisguised propaganda of the Western style of life!" and searched measures to suppress us. But Rector was delighted, he was stronger and our activity continued.

Elements of Settling.

At hat time a lot of new cities were constructed in USSR, especially in Siberia, by five-storied buildings of one type and that was a boring picture. We decided to demonstrate in our diploma work that cities could be different. Our objective was formulated as following: "to form representations of ideal socialist city". We should have overcome significant obstacles. All literature in our disposal was mainly devoted to compositional basics of architecture and urbanism. Even city layout was regarded as an aesthetic problem. There were not many cars and metropolitan was considered a marvel specified for a capital.

We were rushing throughout the city searching people who worked in urban planning in the 1920[s]. We talked with specialists on hygiene (pre-ecologists), searched sociologists, economists and philosophers. (In Stalin's time these sciences are regarded only from Marxists positions). We were getting books, had meetings with rear foreign architects. (Opportunity to go abroad was highly limited). We were studying structure of kindergartens and schools. We were examining new systems of consumer services, etc. In such a way we were gradually studying the urban planning.

Rector proposed to pay attention to Siberian city Krytovo. It was situated at the riverside of the Chulym River in Krasnoyarsk Region. It is intended to build such a city-state in nearest years. Future Krytovo was 3500 away from Moscow. We came there in winter and found ourselves at high bank above the wide frozen river. There was a strong wind with snow. Temperature was 18 degrees below zero. Small village was hidden from frost in ravine. It was a strange place for the ideal city of future. But we continued our work. Each of us was responsible for one or another part of project. Someone was making city project; the others were designing residential districts. Someone was designing city centers, schools, kindergartens, etc. Of course we regularly discussed entire topics, especially city layout. We elaborated ideal matrix for city adapting to Krytovo relief. All work was also divided for theoretical part with ideal schemes reflecting some or another urban essence, and project part, where schemes were adapted to specific natural conditions.

According to our representation city should be a complete unit with population around 100000 inhabitants. It should not grow up. If it were necessary to rise up population — new city should be built. So we made some kind of "corpuscular" urban planning. We called these cities as "New Elements of Settling" or NERs. In 1960 collective diploma project was presented and attracted a big crowd of people. The hall of 300 sq. meters area was full of our exposition. Rector invited entire leading theoreticians of architecture. Press was presented as well. Discussion was continuing for many hours. Ones accused us of deviation from generally known truths; the others praised us for novelty and courageous ideas. But everybody was agree that after 1920[s] it was the first initiative (not State) proposal of some new ideas in urban planning field.

After diploma project we started working in different state project bureaus. But we continued to meet and wrote a book. (It was necessary to receive permission at the State level!) In 1967 the book "New Elements of Settling" issued in "Strojizdat" publishing house. It comprised not only the design proposals, but also vast sociological materials. It was surprising, but in 1968 this book was translated and issued in Italian publishing house "Il Saggiatore Milano" and entitled as «Idee per la Città Communista». Later it was translated in English and Spanish. The astonishing effect is explained by uniqueness of books of such a genre in the USSR.

Work on NER continued after finishing of our studies at MARCHI. New team was gathered. A. Gutnov and I. Lezhava remained from the "old" one. In 1968 it was proposed to represent NER materials at 14th Triennale di Milano. NER concept is essentially recast for this exhibition. Idea of "two origins" becomes prevalent: of NER and traffic corridor (channel of settling). NERs adjoined traffic corridors one way or another. The new treatment for both city and channel was represented and architecture was carefully elaborated. We called this project as NER-2.

In 1970 NER was exposed in main pavilion of EXPO-70 in Japan. For this event our concept was also slightly recast. We called this stage as NER-3. In 1977 it was issued a second book on NER "Future of the City" written by A. Gutnov and I. Lezhava. At this point NER group activity was practically concluded. On base of NER's researches we defended out PhD. theses and won a lot of urban planning competitions. In 1967, for example, we were awarded a 1st prize for proposal to continue Moscow development by linear channels and "NER's" type cities.

Sibstream.

In 2003 it was organized competition in Tokyo. Eight teams from different countries have been proposed to represent their vision of city in 100 years. I gathered a group (A. Gutnov, unfortunately, died in the mid 1980th), and we proposed linear system of settling from St. Petersburg to Vladivostok based on NER's ideas.
In future, when train speed will be around 700 km per hour, this line, in fact, could be linear city. We called this city as Sibstream supposing that it could be economic capital of Russia.
Most powerful of these lines is Great Siberian Line, which constitutes gigantic linear system of settling right now. It connects areas of water of Atlantic and Pacific Oceans.

Appearance of this railway was the greatest event in history of Russia. In the mid 19th century it took 40 days for courier to cover a distance from St. Petersburg to Vladivostok. After construction of railway a path to Pacific Ocean took around 10 days. By construction of new line we could reach a velocity of already acting Shanghai express — 440 km per hour and for the way one could spent only 20 hours.
It is supposed that within new speeds there will appear not simply traffic corridor. Gradually it will be formed some megalopolis — i.e. unified linear urban formation — based on Transsib and Baikal-Amur Lines and necklace of cities adjoining them. Possibly it will be never as dense as Boston-Washington one at north-east of USA. But active contacts between cities, plants, techno-cities, educational centers, national parks and also relaxation and entertainment areas — they will gradually create some absolutely new and integrated environment. Such a unique urban environment we called as "Sibstream". It could pass close to St. Petersburg, Vologda, Vyatka, Yekaterinburg, Omsk, Novosibirsk, Tomsk, Krasnoyarsk, Irkutsk, Ulan-Ude and Chita, Skovorodino, Belogorsk, Khabarovsk and farther to Vladivostok. There could be deviation from Tayshet through Bratsk, Ust-Kut, Tynda and Komsomolsk-on-Amur to Sovgavan.

Farther this line could be prolonged through Bering Strait and Uelen to Alaska and to the south to impetuously developing Asiatic regions. It's clear that traffic corridor could be continued in the Europe to Hamburg or Havre. Thus entire system will be the base for speedy transit from the Europe to the countries of Pacific Ocean area of water. Besides income from transit of people, cargo, electric energy and hydrocarbons, the significant profits could be made from selling the plots along the Sibstream; the price of them could repeatedly increase.

Obviously such the settlements as Murmansk, Arkhangelsk, Naryan-Mar, Salekhard, Tiksy, Pevek will acquire a big significance again within new stage of Sevmorput' opening up by ice-breakers. Hence it is supposed to build the lines to south crossing Sibstream. These are: a) Murmansk, St. Petersburg, Moscow, Rostov-on-Don, Novorossiysk, Arkhangelsk, Vologda and Astrakhan; b) Naryan-Mar, Perm, Orenburg, Salekhard, Tyumen, Omsk, Dudinka, Yeniseysk and Krasnoyarsk; c)Tiksy, Yakutsk and Skovorodino; d) Pevek, Magadan, Khabarovsk and Vladivostok.

These transverse north-south channels could be also transit, if they prolonged through Turkey, Iran, Afghanistan and China up to ports of Indian Ocean basin. Creation of such a traffic-settling infrastructure will lead to appearance of mighty communicational "skeleton" of Russia, which will affect the even division of population and resources about whole territory of the country.
In future, within the traffic velocity rise up to 500 km per hour and by use of Sibstream, one from Vologda can reach the Urals in two hours. Besides this Vologda citizens could access not only St. Petersburg with its universities, theaters, museums and architectural monuments, but the Great Russian Lakes — Onezhskoye and Ladozhskoye — and also dachas, restaurants and entertainment complexes, distant hundreds kilometers from city. In Moscow, as we know, it takes the same time to drive out hardly from center to nearest suburbs (15 km).

Channel and City. Basis of channel of settling is traffic corridor. Streams of people and goods are constantly moving along it. Channels for their movement are roads, pipe-lines, some kind of conveyer and rails systems. Easy access gets these "channeling" territories very suitable for use.

This zone is approximately of 10-15 kilometers width. Thousands of objects of new integrated environment could be constructed at this territory adjoining traffic corridor. Channel intersects also zones of natural parks, preserved areas, recreation and entertainment centers with hotels, houses for holiday-inns and sanatoriums. Finally, along the channel and near by, there could be territories of intensive land use, such as: plough-lands, farms, pastures, fishing and forest grounds, etc. I.e. huge linear territory of channel is actively assimilated by people. According to our waiting, many territories will loss a population attracted by channels, initial nature will revive at lost places.

Linear systems propaganda doesn't presuppose that new cities must seem as arterial road built up by residential blocks such as Tverskaya Street or Nevsky Prospect. These are full value cities located in transport proximity from this or that stop on the route. They couldn't be so different from the existing cities by their planning structure. It's another matter. For thousands years people tried to equip constructions created not only for defense from enemy's attacks and climatic whims, but to also supplied with heating, light, energy, water, and effective waste moving off. People especially succeeded in it during last century. But result of such an activity turned out to be unexpected. Hundred convenient service mechanisms began to consume a large quantity of energy. Its production and city emissions poison the environment. Now it is necessary not only to help people, but to save nature itself from which they extract the goods. And it changes all philosophy of construction activity. Linear systems of settling show us the best exit from this situation.

While constructing new cities we should create a unified system managing the entire occurring processes. New cities should not only receive the goods from centralized sources, but to control all consumption cycle, including character of waste emitted to atmosphere or the soil. Not only industry and power supply have to be wasteless, but also all people activity including urban planning. Eternally growing cities can't serve for us as a sample. Multipurpose engineering systems serving new cities can control only the dense and accomplished structure.

Cities developed for thousand of years by gradual, spontaneous territorial addition. Even if city constructed at once, according to uniform scheme, it was growing. Now situation is changing. City should cease to be "grouping" of separately standing buildings. This is uniform construction of big density in which all occurring technological processes are controlled. Naturally cities can be both low-floor and multistoried. City can be of any form, but it should be dense, refuse from spontaneous growth and find a new quality – the centralized management of all engineering processes.

Analogies.

People can concentrate in new cities along the channels of settling. It is possible to give a number of analogies to understand better two basic elements: transport channel and city, to comprehend a complicated principle of their interaction.

Geometrical analogy. It's strange enough, but all communications can be finally only linear. All settlements are always connected with road. City, even if it is "spots-shaped", consists of capillaries of roads which buildings adjoin. Even rooms are connected among themselves by means of corridor. Even groundhogs are organizing their shelters and digging tunnels with "rooms" deviating from them. Therefore, all urban planning systems always consist of communication and objects adjoining them. It doesn't depend on our will. It's manifestation of some general law specific for architectural spatial geometry.

Certain "zoological" analogy can be also constructed. City is set of interconnected constructions. Usually they are located nearby the center forming certain round «spot of development». Why it is round? Because it is desirable a fast mutual availability and availability of the center. But the same "assemblage" of houses could be disposed in line. The nature actively uses this principle. It created not only "compact" hedgehog, but also a "linear" grass-snake. For one functions a hedgehog is good, for others a grass-snake is good. These are simply two different types of bio-groping. Now in urban planning it is used in full extent only configuration of "hedgehog". Whether it is time to involve a "grass-snake" as well?

Another analogy is "botanical". Channel with a transport corridor in the middle could be compared with a tree trunk on which vivifying juice goes by a continuous stream. At the same time, cities are like some fruits, i.e. — places in which this juice is collected. Cities like fruits accumulate the cultural resources necessary for reproduction of human race. It seems that "trunk" system (channel) and "fruit" (city) is more perfect than disperse structure of creeping-away mosses and lichens in manner of the modern cities.

The philosophical analogy is also possible. City is person's birthplace and place of education. This is a place where one is formed and where his family and friends are living. Besides it is a place where city culture collects making it unique. It's his homeland. Channel is the city counterbalance. This is a place where an active and unpredictable life is going. Here man is opposed to surrounding world. This is a place of fights and changes, victories and defeats. It's a place of work, experiments, entertainments and active relaxation. It's not hard to notice a presence of some dualism in this discourse. There are two opposite initial powers, but supplementing each other. Channel

and city can be treated as focuses of masculine and feminine initial powers. They are like Yin and Yang in Chinese philosophy. Analogies help to understand that orientation to linear systems of settling is not casual. It has deep cultural, historical, philosophical and socially economic bases.

Moscow.

Linear systems of settling declared in NER are applicable to modern Moscow as well. Moscow is capital of huge state. Its population promptly grows. We want or not, the growth will continue. But already now in 2012 the city is choking in traffic jams. If to build up territory like the contemporary Moscow and bigger than it, what will happen with transport? If huge inhabited territory will adjoin the city from the south (as supposed), so huge stream of cars will go to the old part of Moscow and city transport will stop. To resolve Moscow growth problem it is necessary, probably, to pay attention to linear systems of settling. Moscow and St. Petersburg always strived to each other.

In the 18th century the first Russian railway connected these two cities. At the beginning of the 20th century fantastic ideas appeared to connect two capitals in linear system consisted of garden cities. After the Revolution a great parabola of Ladovsky is appeared demonstrating “power” emission of Moscow towards Leningrad. In the 1970th there were a lot of theses on this subject. At last a train “Sapsan” appeared and it connected two cities by high-speed line. It’s getting clear, that this line can be used for further development of Moscow and Petersburg.

Let us plan five stops: Klin, Tver, Vyshny Volochyok, Okulovka and Chudovo. Distance between them is approximately 100 kilometers. If speed of train will reach 300 km per hour, we will spend about 20 minutes moving between stops. If each stop will be adjoined by 4-5 small, cities of big density with population of 80-100 thousand people, it will be possible to settle on this channel (not accounting the existing settlements) more than two million people. Way from Moscow to St. Petersburg will take a little more than 2 hours. Now it is possible to spend more then 3 hours to cross Moscow from the end to the end by car.

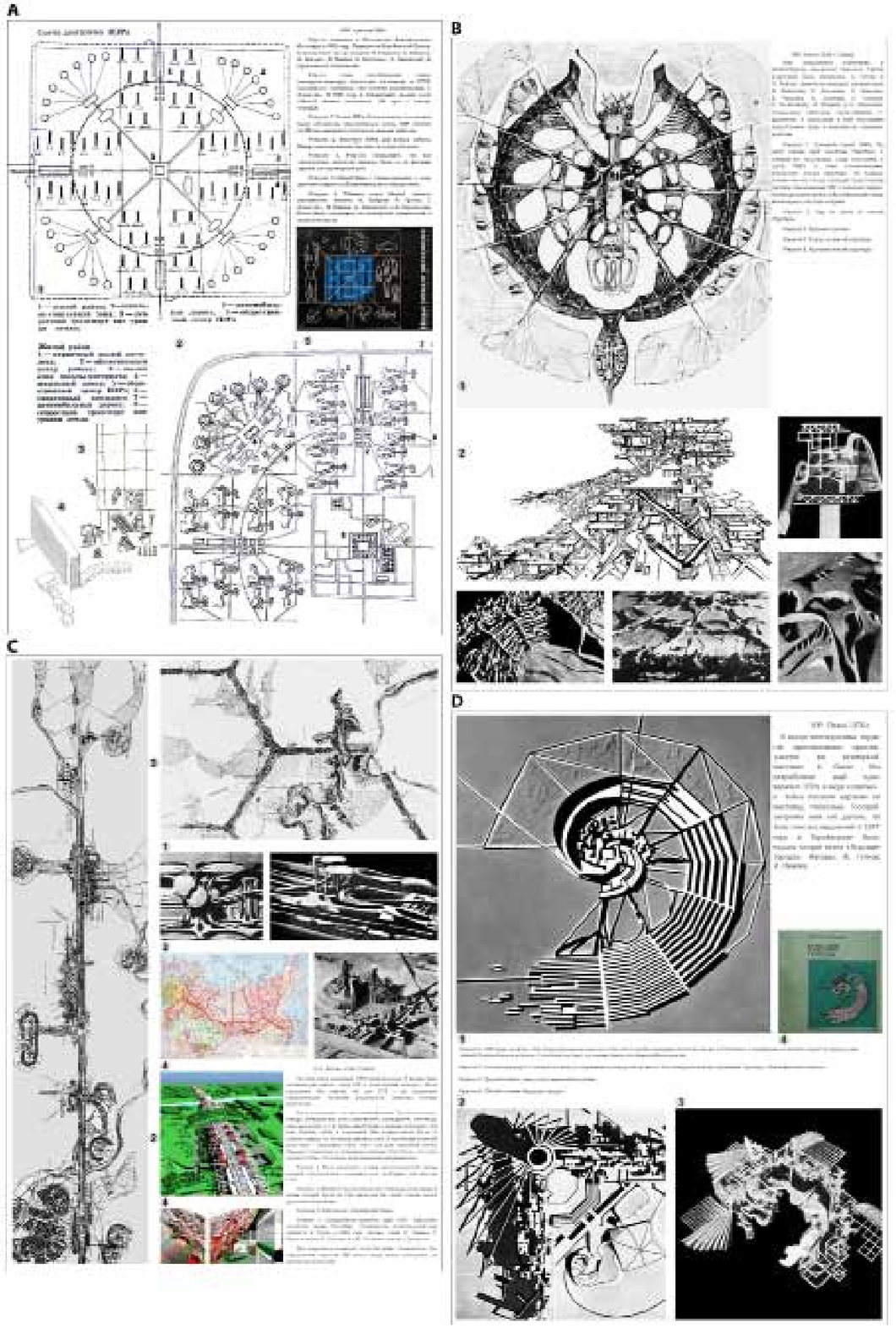
There are some other advantages. This route possesses a huge land resource. The general area of Moscow within ring is now about 800 square kilometers, and it filled up by building and roads. According to recent data the city will be added about 1000 more square kilometers in the south. At the same time a stripe along route Moscow–St. Petersburg of only 10 kilometer wide will give not less than 5000 square kilometers area. And now no more than 4% of area is built up on it. Plants, agricultural zones, universities, places of entertainment, etc. can appear along such a transport channel. Thus, economy can find a new “breath” by turn to the channel.

One should take into account the high speeds of movement on line. Hence it is favorable to construct the modern airport working both for Moscow and St. Petersburg somewhere around Bologoye. It will take about the hour to reach it from both cities. Probably it can be more useful, than to develop endlessly the airports of Domodedovo and Pulkovo and increase the noisy zones.

We hope that transport corridor will draw up the population, and this, in its turn, will stop a disperse extension of Moscow suburbs development at the natural territories. Probably, people from capital agglomerations will prefer to settle «on route» at non-polluted settlements instead of choking in traffic jams in huge cities or to live in industrial cities constructed according to the standards fifty years old. Of course, there will be necessary to create the modern transitional knots for this purpose at Petersburg and Moscow stations for best communication with city transport. In future it will be possible to direct the linear system of settling by the way of “Sapsan” to Nizhniy Novgorod as well.

New paradigm.

I think till now that such an urban paradigm was very suitable for the large expanses of the USSR and Russia. It’s getting time to develop essentially different, typically Russian, urban-planning doctrine including both new systems of settling and new ideology of the cities formation.



Rejana Lucci
Università degli Studi Federico II, Italy

Knowledge and design for collected urban landscapes

Naples.

In the collective imagination, the name of the city immediately conjures up a series of well-established landscapes and panoramas: the sea and the intricate patterns of the coastline of the bay, the "system of amphitheatres" from Pozzuoli to Punta Campanella; the complex hill structure of the volcanic semicircles surrounding the city and the area bordering it to the west, from which the most famous panoramic views from above towards the sea have been drawn; the harmonious profile - wide and dramatic - of the Mt Somma-Mt Vesuvius system, an imposing landmark that defines the whole territory and all the settlements of the Naples area.

The unusual geographic conformation of the area has always been the underlying structure which, even in morphological terms, has conditioned, influenced and shaped every type of settlement or form of anthropic intervention; this may range from the location of urban architecture to its position, or from the layout of the land to the conformation of the waterways. The same is also true for the access points to the city through the roads of the plains to the east and west or from the hills to the north.
However, Naples is a modern metropolis, with about three million inhabitants, which has developed over a long period through a process of successive stratification. Over the last two hundred years, Naples has gradually expanded into the area surrounding the city, leading to a densely occupied land surface with few gaps – caused almost always by the physical obstacles created by its natural geomorphology. This process has sometimes taken place in spasmodic, confused fashion along the whole coastline from Pozzuoli in the Phlegrean Fields to the conurbations of the coast running around Vesuvius as far as Castellammare. The end result is a large urban expanse where built-up areas have sprawled up into the hills, frequently without considering their panoramic nature, until they have spilled over into the plain north of Naples; it has led to densification in coastal areas; it has transformed runoff channels into roads and has covered riverbeds and streams; large industrial plants have been located in areas immediately outside the city, even in panoramic sites; it has turned gardens and green areas into residential parceling. This area has become spread with the necessary network of infrastructure which has been superimposed uncritically, with its own technical arrangement and its own land organisation, on the structure of the territory and the city.

In order to understand and recognise the features of the current conformation, it is necessary to interpret the contradictions and multiple stratifications of the different, contrasting systems in this vast and complex area that have been involved in the growth of the city until the present day; they should also be viewed in relation to the structure of this natural and anthropomorphic geomorphological landscape which is extremely dramatic and distinctive. Indeed, it is precisely from the relationship with the landscape that we can delimit and identify several unresolved areas and several issues and problems of the city. This is due to the fact that the expansion of the city, in very time, has always been restricted by the complex orography of the area which has gradually caused breaks, interruptions and overlapping between the parts involved in the expansion. This is the background to the modern issues which stem either from the motives for the separation or lack of coherent development of the "outer" areas (to the east and the west), or from the attrition of landlocked areas which have developed during different periods. This type of morphology has been further complicated by modern urban development which has added to the contradictions and attrition that are always created with the layout of all kinds of transport infrastructure.

In the specific case of this study, two different examples of infrastructure – two different ways of crossing different parts of the Neapolitan cityscape – will be examined: one, situated in the eastern part of the 'Centro Direzionale' (office district), is the s.s. 620 highway, a modern flyover which enters the city by crossing over the industrial zone, an area undergoing general divestment situated in the ancient "Paludi" (marshland); it is considered an emerging element of the urban structure of Naples which can be incorporated into the morphology of its transformation..
The other piece of infrastructure, situated on the coast near Mt. Vesuvius, is the fixed demarcation line of the state railway which runs south from Naples along the coast. This piece of infrastructure is considered to be the "underlying theme", an initial pretext for telling the crossing area features.

The eastern area of Naples and the "Assembled City".

The eastern area of Naples has always been regarded as a wide flat area lying on the edge of the city, but also as a wide hollow that collects all the rainwater from Mt Vesuvius and the surrounding hills, and therefore a marshy, alluvial zone.
So, there was a long period when the city did not expand beyond the grey line of the turreted Aragonese walls, with the result that the distinctive features of this area have remained intact: the old access roads to the city and its gates; a dense, branched structure of streams, small rivers and canals running across the area, channeling the runoff rainwater towards the coast and the sea. This was the layout of the landscape and these were the bases of a minute, fragmented landscape of agricultural plots, made viable by land reclamation, drainage and canalisation. In the past, there even used to be water mills and areas reserved for fishing.

It was during the rise of the industrial city in the early nineteenth century that new facilities, equipment and services began to be located in this part of Naples, which was more easily accessible than others. This was the moment that marked the beginning of the radical transformation of the city in terms of the typical forms of modern expansion: the various infrastructural systems began to appear; the location of the industrial plants and factories was based mainly on accessibility rather than the suitability of the area; the planning of the expansion of the city took place according to autonomous characteristics and layouts which were mechanically superimposed on the existing landscape; its traditions were abandoned and its distinctive features sank into oblivion although these features can still occasionally be made out in the remaining landlocked spaces.

This tale of deletion and eradication of memory has been the setting for the typical contemporary transformation of suburban areas and the peripheries of large metropolises.

It is a tale which contains within it all the typical and widespread terms used to describe these urban areas: closure, dismantling and abandonment (of industries and factories which have closed or have been moved to another marginal area), decay (of low and moderate income housing, road and street structures and general facilities), disorientation (reference points and bearings are lost, together with the lack of recognisable public spaces), overbuilding (of industrial sites, the covering of riverbeds, the 'Centro Direzionale' with its skyscrapers and raised plate), and overlapping or inclusions (of systems, parts, different features such as railway lines that cross motorway junctions, which surround productive buildings, which in turn alternate with agricultural or residential spaces). It has led to a continuous accumulation of systems with different forms of logic underlying them, frequently merely juxtaposed, with random relationships in what may be defined as an "assembled landscape". In particular, even here in the eastern areas, what emerges today most clearly is the sense of a vacuum or emptiness, the empty space of abandoned areas, areas awaiting transformation, cleared areas situated between various odd remaining areas, large fragments of oversized roads which suddenly end up in the minutely divided areas described above, the areas that lie in the shadows of the viaduct.

Our study area, which lies between the railway and via Poggioreale to the north, bears the imprint of an urban redevelopment project which has been gradually implemented with enormous delays and indecision since the seventies: only half of Tange's original plan for the 'Centro Direzionale' has been built, and today, with its skyscrapers and its plate, the office district remains divorced from its surroundings. The remaining part of the area, situated between the 'Centro Direzionale' and the northern branch of the raised railway, is still waiting to become a mixed tertiary zone with services, residential accommodation and public facilities. In theory, it will be built according to a plan by which the technical office of the town planning department of Naples city council is trying to create a more precise relationship with the natural environment and local character of the area; the distinctive features and traces could thus be recovered, and large areas of parkland and gardens could be designed as a connective structure with the wider landscape.

Meanwhile, in the long wait for future transformations, the defining features of the area are emptiness and large distances. There are wide areas which have been abandoned due to the dismantling of buildings dating to various times: the fruit and vegetable market, industrial and manufacturing plants, the old abattoir (of which the only remaining part is the wall enclosure with its long perimeter wall and little else), a sports building dating to the 1980s, and several building planes of underground urban railway lines. There are also large plots of land with no buildings, empty and desolate, created by the partial layout of incomplete new roads. Lastly, there are marginal peripheral areas between the various systems which have become used for a series of generally illegal activities linked to waste, recycling and small-scale commerce.

This is the panorama upon which lies the s.s.162 highway, the flyover which links the 'Centro Direzionale' and the city centre to all the large eastern conurbations around Ponticelli and which is connected to the outlying motorway link roads and the city ring road.

In the interpretation of the planning, the study of this section of the urban landscape has also raised a series of issues about its transformation, a thematic program which can bring it within a coherent and complete discourse regarding its transformation into suitable urban features.

The railway along the Vesuvian coastline and the "critical crossing"

The state railway that runs along the coastline around Mt Vesuvius close to the sea was the first Italian railway line to have been built (the first stretch of line between Naples and Torre del Greco was completed in 1840).

This dramatic segregating line formed part of the transformation and development of these areas. It altered the natural relationship of the landscape with the sea and the coastline, triggering a powerful boundary effect which has definitely separated some parts and prevented other connections and relationships. It has had a highly detrimental effect upon the development of coastal urban settlements which would have otherwise undergone a more natural expansion towards the sea. It has therefore always been a factor in the expansion and urbanisation of these areas.

The whole area represents a large landscape influenced by Mt Vesuvius which has led to a well-defined, slightly sloping area between its base and the sea. In terms of the plan, the contours of the base and the curve of the coast generally run almost parallel to each other, creating a strip of easy accessibility and excellent exposure which also has the added advantage of superb views. This strip is also marked by a series of systems which run through it from the hill slopes to the sea: the river-bed system of the surface waterways have dented and hollowed out the land surface; the system of volcanic lava flows which have accumulated their material along their route to the sea.
We can therefore consider this area of the Vesuvian coastline as a type of homogeneous landscape, a strip of land with a kind of organic structure that enables it to be delimited and considered as a study area.

A series of parallel systems of transport run through this fairly small area (on average, around 2 km): it begins with the state railway that forms a link with Calabria and Sicilia and runs along the coast; the "S.S. Tirrena inferior" immediately above, the old "Golden Mile"; the Circumvesuviana, local light railway and the section of the A3 Naples-Salerno motorway.

This is therefore an atypical case of landscape transformation which has enveloped a powerful and unique natural structure within a muddle of different systems and extensive urbanisation, an area crammed with complex memories and traces ranging from natural surroundings to archaeological sites – Herculaneum, Pompeii, Castellammare, Oplontis… - and from monumental works of architecture – the system of eighteenth century Vesuvian villas with the royal palace in Portici – to agricultural sites. Today, it constitutes a landscape made up of different elements which belong to different eras and layouts: we are therefore faced with an overlap of various systems which lie alongside one another, becoming increasingly complicated, becoming stratified and contradicting one another, and creating significant depths of unresolved ties. Although the view from a distance still preserves the highly distinctive character of one of the most famous panoramas in the world, the current state of the road network and the living conditions has been significantly impaired and is at a critical point.

This study explores the theme of a "critical crossing" for the infrastructure. In other words, it deals with the hypothesis that any infrastructural layout must address all the main elements of the landscape involved in the crossing, linking the need for technical solutions to local characteristics, in order to avoid an intervention totally divorced from the local situation and to create a distinctive and unique local character.

The study therefore focuses on the specific issues related to the local area because, through the explanation of their latent planning potential, they are linked to the fundamental questions of the intervention while the appropriate planning "actions".
With regard to the coastal railway line, it was therefore deemed necessary to address at least two closely connected issues which were considered in terms of their changes and whose main elements were explored:
- the distinctive features and elements of the current settlement structure of the coastline consisting of the strip of land between the 'Miglio d'Oro' and the sea,
- and the conformation of the coastline in relation to the railway line and its various sections.

These two themes are actually closely inter-linked because the distinctive eighteenth century settlement structure of the Vesuvian villas initially proved to be a marvellous way of interpreting the typical features of the area. In architectural terms, the original typological structure brought together and reinterpreted all the elements of the local area, using the courtyard structure of the villas and the sequence of its spaces as a pivotal factor between the construction of the monumental road and the transformation of agricultural land into gardens and parks linked to the residences. This gave a unique and recognisable architectural form to the close visual relationship between Mt Vesuvius, the coastline and the sea.

Despite the construction of the railway, this system became more firmly established through the construction of buildings for rented accommodation which continue to be arranged in a ribbon development along the "Golden mile", while the process of fragmentation of the villas' parks began with the construction of smaller, middle class villas and small buildings for family accommodation. The permanent use of the entire coastal area for tourism also became consolidated and the custom of swimming in the sea off this stretch of coastline became established despite the problems of access. Indeed, it was a tradition which remained firmly entrenched until the 1960s.

And then, there was a phase of violent, rapid and extensive growth of peripheral and suburban areas which, like everywhere else, ignored the nature of the landscape and invaded the countryside with residential parceling-out of variable quality. This involved social housings which led to the construction of largely similar 'enclave systems', enclosures with large multifamily buildings freely (and densely) scattered within the plot of land. Bearings were lost, hierarchies were overturned, as were the relationships with the layout and landmarks of the local area; the firmly-established existing settlement structure became trivialized with buildings which, for the most part, were of mediocre and anonymous quality. This invasion of the landscape became intensified in the immediate vicinity of Naples until the modern town of Ercolano, leading to densification and a significant increase in the population which, however, was not matched by a similar extension to the layout of new recognisable urban systems.

Rejana Lucci
Università degli Studi Federico II, Italy

In the large open spaces which continue to exist in the overall area, and which form a large part of the landscape after Torre del Greco, the fragmentation of landed property (at times extremely dense) has contributed to a minutely divided landscape in which extensive plots of land, with greenhouses, small villas, cultivated areas, small houses, vegetable gardens, small buildings and small warehouses, alternate and overlap.

The analysis of the area between the 'Miglio d'oro' and the sea was restricted to the section between Portici and Torre Annunziata: for this stretch of land, four "local sections" were selected in order to illustrate a series of issues born from the combination of different elements and settlements, typical of the area morphology.

One of the most pressing issues concerns the transformation of the system of coastal villas which occupy the whole of the section of land between the road and the sea, prior to the royal palace of Portici. Besides the total conservation of several parts, the situation here displays the classical sample of typical alterations: the park of the villa has been divided and parcelled out; the strip of land between the road and the sea has been occupied by parcelled out areas of twentieth century buildings.

Other typical issues that emerged include the theme of the villa-monument which occupies a large part of the land between the road and the sea (distant from each other) or the system of greenhouses which, in morphological terms, characterises a large part of the local area. At least, there is the question of the contemporary parcelling out of residential buildings, which generally takes the form of an enclosure which is completely divorced from its surroundings, except for the access routes, with different plans that are never linked to the specific settlement criteria that might somehow reflect local architectural traditions. At least, the study proposes an initial hypothesis for the thematic and interpretative description of the railway line layout through the identification of crossed emerging places and the issues raised by the layout: in practice, each new crossing of the railway line resolves a specific question and is simultaneously designed to be a "central place" by means of which crisis situations are transformed; the character of the areas examined in relationship to each other is reinterpreted and a clearly defined role is assigned to places, points and stretches of land.

Following this approach, a series of experimental planning schemes was developed which mainly concerned the theme of the station as a new collective place and crossing way.

Image. Eastern Naples: the assembled city.
Photo of Rejana Lucci

Silvia Malcovati
With Stefano Suriano and with Leonardo Formoso and Alessandro Cuccarollo
Politecnico di Torino, Italy

Projects for compact city: the case of San Salvario in Turin

Themes and objectives of this study

This study responds to a dual need. The first one can be expressed as the contingent necessity and it is linked to a specific case study, the redevelopment and transformation of the San Salvario district in Turin. This area consists in an orthogonal grid of late nineteenth and early twentieth century blocks, with a discontinuous structure due to the presence of plots which have never been developed or were destroyed during the Second World War, and which continue to be unresolved, as a consequence of neglect or planning indecision.
The second need can be expressed as a permanent idea and is the concept of the continuity of the historical city, offering a chance to reflect on the meaning of block and neighborhood in urban contemporary design. The overall objectives of this study are to confirm the role of the compact city as a fundamental settlement principle of great cultural and social value, and to demonstrate its feasibility, also in terms of environmental sustainability, through housing projects that fit into the existing urban context thereby completing and transforming the existing structures.

Brief history of the neighborhood

The district of San Salvario developed since 1851, when it was approved, after a nearly decennial discussion and planning phase followed to the demolition of the boundary wall (1840). The discussion results were expressed through the plan for the "*Enlargment of the city of Turin outside Porta Nuova*" by the architect Carlo Promis, which extended between the river Po with the park and the Valentino Castle, summer residence of the Savoy monarchy, and the Porta Nuova, the city gate where stands the new railway station (1860-68) by the architect Alessandro Mazzucchetti.
Even the latest expansion of the city, carried out by the end of the nineteenth century, confirmed the historical settlement pattern of Turin: the neighborhood is made of compact and densely built blocks, following a regular and orthogonal grid. In this context the principal roads emerge (from north to south: Via Nizza, Via Madama Cristina and Via Massimo D'Azeglio; from east to west: Corso Vittorio Emanuele II, via Guglielmo Marconi, Corso Raffaello, Corso Dante and Corso Bramante) and also some squares are drawn inside the geometrical system of the blocks (Piazza Madama Cristina, Largo Saluzzo, Piazza Nizza).[1]
Promis' plan canceled the "Allea Oscura", the ancient tree-lined suburban avenue that diagonally connected the Castle of Valentino to Porta Nuova, by putting forward a regular framework of streets and blocks, in continuity with the Roman city and the extensions of the eighteenth century.[2] The grand perspectival axis that connects the Convent of San Salvario with the Castle of Valentino and the layout of Via Nizza became, at the contrary, part of this new urban system, giving rise to the variables in the guidelines of this part of town.

Description of morphological characters and building typologies

The stages of construction followed one another for a century from the center outwards and from via Nizza to the river, until the almost complete occupation of the building lots.
The building structure has the typical features of the nineteenth century city: each block is divided into regular parcels of various sizes (from 15 x 35 to 15 x 45 m for corner lots, from 10 x 15 up to the 30 x 45 m for the other lots) and the occupation of the land is intensive. It often yields a speculative logic more than compositional and architectural principles. Despite the blocks magnitude, except for rare cases, the use of courtyard for common areas or gardens, is not expected. The parcel is built in all its depth, with a forward building on the road and a perimeter constructions inside the courtyard.
The variety of building forms is one of the distinguishing features of the neighborhood, and is due to the fragmentation of the land property, the coexistence of residential and productive functions and the duration of the construction process.
Promis' plan established some quantitative parameters (such as the floors number, initially set at 4 with 15.40 m in height and no dormer windows and attic, then raised to 16.00 m also for the internal courtyards and finally to 21 m with attic). It also provided some indications on the distribution of the volume and composition of the facades. Particular care was taken with the formal configuration of the houses facing the main traffic axes, which had to have arcades on the ground floor, intended for shops, and should turn at the corners with an identical design to at least 7.60 m in to suggest the continuity of the facades even on the side streets.[3]
The use of several different built types as well as a stylistic variation of facade solutions corresponds to each stage of construction. Essentially there are four main housing types:
- The middle-class house with arcade, characterized by the unitary project of the fronts on the street with shops at the ground floor and rental housing types. It is situated on Corso Vittorio and along Via Nizza;
- The Umbertine house, the most modern in terms of services, but fitted with the type of mansion, which still retains the row of halls and reception rooms and the "decoration" of the facade as an element of social achievement;
- The middle-class rental home, result of a "patrimonial" idea of the city, which provides the most rational exploitation of volumes and living spaces, introducing also the diffusion of sinks, toilets and common services;
- The gallery house, intended for the lower classes and usually localized within the courtyards, with shared toilets outside the home.

The blocks on the road always have a double volume with a double pitch roof. The access is only provided by a pedestrian/carriage entrance of varying sizes between 3.5 and 4.5 m, connected to the square stairwell, usually with three flights. Flats are directly reachable from the landings, in some cases even directly connected to the gallery of the internal buildings.
The floor height varies from 5 m for the ground floor (sometimes with mezzanine), to 4.50 m for the main floor, up to 3.50 for the upper floors. The twentieth-century architectures, on the other hand, show greater uniformity, despite the remaining exception of the ground floors. The fronts on the street have balconies, often arranged in the characteristic alternating pattern, with railings and decorations in accordance with the taste of the time.
The gallery house is generally used for the buildings inside the courtyards, with simple volume, leaning against the walls of the lot, with a U, C or L schema. The stairwells coincide sometimes with those of the main building, or are independent, accessible from the court. The interior facades statements do not present any type of decoration and the toilets are often outside the home, on the balcony or, in later examples, grouped near the stairwell. The roof has a single pitch towards the interior of the court (often completed by a mirror-like solution on the bordering lot).
Only in a few cases within the urban structure of San Salvario there is the relationship between porch, hallway, staircase, courtyard and sometimes garden, which is typical of the noble buildings of the seventeenth and eighteenth centuries expansions of Turin. This is a relationship later transposed in the open element of the "passage" or of the "gallery", which represents an important connection tool, both from the visual and functional point of view, between the public space of the road and the residential texture. The interior of the courtyards of San Salvario is extremely fragmented, because of the division of land and since the origin is occupied by one third by buildings, used at the ground floor as garages, workshops and stables and at the upper floors for housing. Even if it is not built in many cases with the passing of time the yard was occupied by low buildings used as warehouses or garages. In addition, the galleries were plugged with structures built with different materials depriving the court of its own architectural and environmental quality.

Continuity of the contemporary city with the historical city

The research is based on the complementarity between analysis and design as a fundamental knowledge tool for the transformation of reality. From these premises, the work is therefore intended to verify some design hypothesis on the urban structure of San Salvario: by the construction of new housing in order to complete the missing texture that are able to reinterpret the historical experience of architecture in a contemporary way, confirming the key idea of the compact city as a sustainable city, from the environmental and cultural point of view. This centrality of the urban project identifies in the block the specific field of application where, at the same time, it is possible to find the foundational issues of "making city" and solve the current problems of loss of land, energy saving, and life cycle assessment. Only where this dual approach – which expresses a synthesis between the generality of the urban scale and the peculiarities of the architectural scale – is not irretrievably lost, it is still possible to create urbanity, giving a strong response to urban sprawl.
In order to make the living spaces being regarded as sustainable, the necessary condition is to correspond to a clear urban logic, to its global construction, to a civil project. The criteria of quality in the design of urban housing inside the block may not be related only to the materiality of the construction, but it must always correspond to an idea of the city, showing a necessary continuity with tradition.
An experimental design that, using sustainable materials and techniques, considers architecture as a separate object from the context (preferring the logic of consumption to those of the architectural composition) is destined to suffer by a "naive environmentalism", marking the same conceptual distance that exists between the provisional character of an episode and the complexity of a story.

The experience of urban studies in Italy and Europe

The idea of the continuity between the contemporary city and the city of the past as an application field for the project moves nevertheless from two more general topics of discussion and research. On the one hand, a renewed critical interest for the studies in so-called "urban analysis": in the seventies and eighties, in Italy and Europe, it already laid the "technical" and architectural knowledge of the elements and constitutive processes of the urban organism at the basis of development and transformation of the city, and it underlined the contemporary potential of historical structures.[4] On the other hand, there is the comparison with some recent experiences in Europe that have implemented this legacy by confronting with the actual construction of a place, testing the model of the compact city as an example of sustainable city, actualizing the notion of neighborhood as a functionally independent unit (with precise type-morphological characteristics and strong identity), and ultimately by enhancing the theme of the urban block as a characterizing element through architectural solutions with clear value of actuality.
We refer, among others, to the experiences of Berlin (by the IBA 1979-84 to the "Kritische Rekonstruktion" in the nineties), of Hamburg (from the Hafen City to the IBA 2013) and of Frankfurt (from the researches of the German Institute for Urban Art to the reconstruction projects for the central areas of the city), but also of Barcelona (from the reflections on the Cerdá plan to the 1992 Olympic games until the most recent transformations of the plan 22@ for the Poble Nou) and Amsterdam (from the new residential districts on the islands of Borneo-Sporenburg and KNSM/Java to the IJburg).[5]
After decades of testing settlement models which pretended to be an alternative to the city and were founded on its dissolution, these studies and these experiences demonstrate the rise of a new interest and a new openness towards the actual experience, the real built environment, as it is and as it was, and also a chance to rehabilitate a concept of living the city more directly linked to our daily actions. The reality of the historical city seems to be the most reliable reference point from which it will be possible to recover, by means of architecture, some general objectives of collective and social character including the desire of substance and durability and a renewed idea of "beauty" of the city.[6]
These experiences also show how housing occupies again a central place among the themes of contemporary design and regains its role in the construction of the city, giving up to speculation at all costs and on the contrary looking for a scale suitable to the sites and to the definition of a built environment in which the question of "*decorum*" of public space regains its sense of collective social value.

Role of the project in the urban transformation

An analysis of the urban texture of the city was made using historical maps, retracing existing buildings and recognizing the permanent elements and typologies of the historical city. These studies have been followed by an analysis of the relationship between the solid and empty spaces and of the paths and the permeability of the spaces. Finally, study and project models of the areas of intervention as well as of the individual buildings have been constructed. The products of the analytical phase are basically a series of historical and analytical maps and a typological survey of the ground floors. These materials were the analytical basis on which projects have been set.
The design choices are aimed at re-establishing a close relationship between the house and the road – or square – as construction element of collective space, in continuity with the ideas, experiences and examples of the ancient city. In particular, the proposed projects, impacting on urban morphology through the volumetric definition and typological choices, try to investigate the relationship between the collective dimension of urban space and the private dimension of the house, by relating the built form with the shape of the open space. The theme of living is developed not only through the definition of the functional and distribution aspects, but especially by confrontation with the urban block and with the historical texture of the city, taking the volumetric and compositive theme as key element in the design of housing. The architectural design can, thus, reveal the potential of a "contemporary use" of the compact city, reestablishing its significance from the point of view of living but also claiming the eminently collective right of each theme of architecture.

Some case studies

Basically projects can be divided into four thematic groups:
- Projects completing the street front;
- Projects stitching inside the block;
- Projects of reconstruction of large portions of blocks or new construction in unbuilt areas;
- Ideal proposal for the architecture of a modern block.

Focus of action is, firstly, the reconstitution of the continuity of street fronts and, secondly, the design of collective or private courtyards that are identified by a clear architectural solution of space and even by a formal unity of the facades.
The project proposals derive its housing types directly from the analysis of built city: the block-house, with a driveway entrance and staircase with three flights for the buildings on the street front, or the townhouse in narrow and deep plots cases; the balcony house for the buildings inside the court and the type of the palace for the great urban spaces. Within these consolidated elements we worked on the construction of housing space, introducing duplex solutions on the upper floors of the block-houses with setbacks and balconies on the road, and experimenting, in the courts, the use of the balcony applied to town and row houses where the distribution element takes on the sense of an outdoor space, of an extension of the house.

The facade issue

In this idea of "urban" architecture, a key role is played by the theme of the facade, as an expressive element of the public-private relation of living and not as a place of a fictional self-representation. It happens not without difficulties: the front is the "face" of the house, through it the building presents itself to the viewer and by the means of it the architect expresses his responsibility towards the community as well as towards the individual.[7] It is a problem even more felt in the case of the completion of urban voids on the street front, where the facade is all that you can see of the project and should, by itself, explain its reason and sense. Here it is often not only the case to fill a physical absence, but also to evoke the material and formal characters of what is missing or disappeared, in order to find solutions for the facade which are able to reproduce with evidence that relationship street-house/public-private which is typical of the historic city. The search for an appropriate architectural language, shared and expressive of the contemporary time, is therefore perhaps the crucial issue with which these projects have to deal, using, with all consequences, once again, the experience of history.
The articulation of the composition is structured through the use of moldings, which start from the elements of construction (spans, overlapping of floors, doors and windows), but go beyond, trying to restore to the structural and functional apparatus (pilasters, lintels, string courses, drip-stones and also window-sills, gutter pipes, etc.) their decorative value, precisely in the sense of "decorum". A decorum in this case starts from the reality of the city and from it derives the elements of composition: the search for modular and proportional systems, the use of symmetry and asymmetry, the interplay of horizontal and vertical parties, the alternation of solids and voids, the hierarchy between the parts, the search for coherence between parts and whole, between architecture and city.

Silvia Malcovati

With Stefano Suriano and with Leonardo Formoso and Alessandro Cuccarollo
Politecnico di Torino, Italy

Notes

[1] About Turin's urban history see Comoli Mandracci, 1983; Passanti, 1983 and Comoli Mandracci - Viglino, 1984.
2 The avenue had been maintained in the first projects, like that of 1843 by Giuseppe Talucchi and in some solutions by the same Promis, strongly influencing the shape of the blocks and the arrangement of the lots.
[3] See Caldera, 1993 and Scarzella, 1995. In consequence of the "law of Naples", in 1885, also in Turin was enacted in 1892 by the Royal Society of Hygiene, a new Building Regulation, to replace the one of 1862, which provided guidelines about sanitry issues, and in particular established precise relationships between the width of streets, building height and size of the inner courts.
[4] See Panerai - Castex - Depaule, 1987; Magnaghi - Tosoni, 1989; Martí Arís, 1990; Schröder, 2008; Caja - Landsberger - Malcovati, 2009; Brenner, 2010; Malcovati, 2011.
[5] About Berlin see: Burg, 1995; Brenner, 2004; Stimmann - Kieren, 2005; Caja - Malcovati, 2009; about Hamburg: HafenCity Hamburg, 2008 and 2012; Hamburgische Arkitektenkammer, 2011; Menzl - González - Breckner - Vogelsang, 2011; about Frankfurt: Stadtplanungsamt Stadt Frankfurt am Main, 2006; Mäckler - Pellnitz, 2011; about Amsterdam: Claus - van Dongen - Schaap, 2001; de Maar, 1999; Bellini, 2007; about Barcelona see: Martí Arís, 1982; Institut Municipal de Promoció Urbanistica, 1991; Busquets, 2005, de Sola Morales, 2008.
[6] Mäckler - Sonne, 2011.
[7] See Neumeyer, 1995 and 2011.

Legenda

Turin, San Salvario, site plan, housing project on the block between Via M. Cristina, Via G. Bidone, Via Ormea, Corso Raffaello, typological studies.

Bibliography

Bellini O. E., *Free parcels: un'innovazione tipologica al quartiere Borneo Sporenburg*, Santarcangelo di Romagna, Maggioli, 2007.

Brenner K. Th., Geisert H., *Das städtische Reihenhaus: Geschichte und Typologie*, Wüstenrot Stiftung (edited by), Stuttgart, Karl Krämer, 2004.

Brenner K. Th. (edited by), *La costruzione della città. Razionalisti berlinesi/Die Konstruktion der Stadt. Berliner Rationalisten*, Firenze, Aión Edizioni, 2010.

Burg A. (edited by), *Neue Berlinische Architektur: Eine Debatte*, Berlin-Basel-Boston, Birkhäuser Verlag, 1995.

Busquets J., *Barcelona: the urban evolution of a compact city*, Rovereto, Nicolodi, 2005.

Caja M., Malcovati S., *Berlino 1990-2010. La ricerca sull'isolato e sul quartiere*, Lampi di stampa, Milano, 2009.

Caja M., Landsberger M., Malcovati S., *Tipologia architettonica e morfologia urbana. Il dibattito italiano. Antologia 1960-1980*, Lampi di stampa, Milano, 2010.

Caldera C., *L'ingrandimento fuori Porta Nuova progettato dal Promis nel 1850*, in P. Scarzella (edited by), *Ambienti e tessuti urbani storici nella zona centrale di Torino,* 2 vol., Torino, Politecnico di Torino, 1993, pp. 11-27.

Claus F., van Dongen F., Schaap T., *Ijburg: Haveneiland and Rieteiland*, Rotterdam, 010 Publishers, 2001.

Comoli Mandracci V., *Torino, Roma-Bari*, Laterza, 1983.

Comoli Mandracci V., Viglino M. (edited by), *Beni culturali ambientali nel Comune di Torino*, Torino, CELID, 1984.

HafenCity Hamburg, IBA Hamburg (edited by), *Architektur im Klimawandel*, Hamburg, HafenCity Hamburg-IBA Hamburg, 2008.

HafenCity Hamburg (edited by), *Themen Quartiere Projekte*, Hamburg, Hafen City, 2012.

Hamburgische Architektenkammer (edited by), *Architektur in Hamburg: Jahrbuch 2011*, Hamburg, Junius Verlag, 2011.

Institut Municipal de Promoció Urbanistica (edited by), *Barcelona, la ciudad i el 92*, Barcelona, Grup 3, 1991.

De Maar B., *Een zee van huizen: de wonigen van New Deal op Borneo-Sporenburg*, Bussum, THOTH, 1999.

Mäckler C., Sonne W. (edited by), *Konferenz zur Schönheit und Lebensfähigkeit der Stadt No. 1*, Zürich, Verlag Niggli, Sulgen, 2011

Mäckler C., Pellnitz A. (edited by), *Die Dortmunder Schule. Architektur und Städtebau*, Zürich, Verlag Niggli, Sulgen, 2011.

Magnaghi A., Tosoni P., *La città smentita. Torino: ricerca tipologica in ambiti urbani di interesse storico*, Torino, Libreria Cortina, 1989.

Malcovati S. (edited by), *Una casa è una casa. Scritti sul pensiero e sull'opera di Giorgio Grassi*, Milano, FrancoAngeli, 2011.

Malcovati S., *Dal postmodernismo al "nuovo realismo": ritorno all'architettura della città/Von der Postmoderne zum "neuen Realismus": Rückkehr zur Architektur der Stadt, in Caja M., Fagioli M. (edited by), Nuovi architetti berlinesi/Neue Berliner Architekten*, Firenze, Aión Edizioni, 2011, pp. 17-24.

Martí Arís C. (edited by), *La manzana como idea de ciudad. Elementos teóricos y propuestas para Barcelona*, 2C Ediciones, Barcelona, 1982.

Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, Milano, Clup, 1990.

Menzl M., González T., Breckner I., Vogelsang S., *Wohnen in der HafenCity. Zuzug, Alltag, Nachbarschaft*, Hamburg, Junius Verlag, 2011.

Neumeyer F., *Mit dem Kopf durch die Wand: Annäherung an das Unwort Fassade*, in Id. (edited by), *Hans Kollhoff,* Ernst & Sohn, Berlin, 1995.

Neumeyer F., *Was ist eine Fassade? Learning from Alberti*, manoscritto inedito, 2011.

Panerai P., Castex J., Depaule J., *Isolato urbano e città contemporanea*, Clup, Milano, 1987.

Passanti M., *Lo sviluppo urbanistico di Torino dalla fondazione all'unità d'Italia*, in Comoli Mandracci V., *La capitale per uno Stato: Torino, studi di storia urbanistica*, Torino, Celid, 1983, pp. 13-65.

Scarzella P. (edited by), *Torino nell'Ottocento e nel Novecento: ampliamenti e trasformazioni entro la cerchia dei corsi napoleonici*, Torino, CELID, 1995.

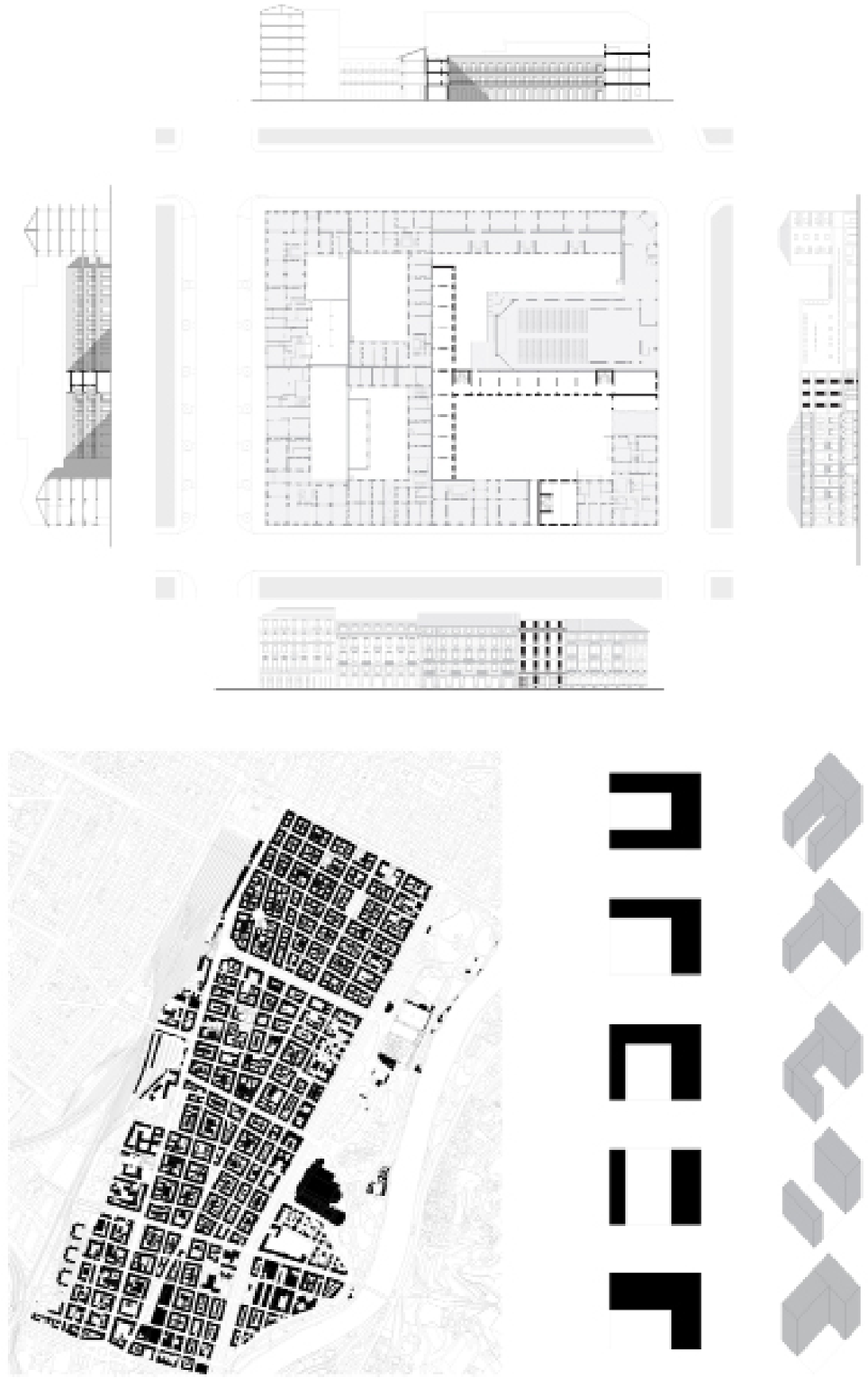
Schröder U. (edited by), *Die Idee der Stadt. Konzepte einer rationalistischen Architektur/L'idea della città. Modelli di un'architettura razionalista*, Tübingen-Berlin, Ernst Wasmuth, 2008.

De Sola Morales M., *Diez lecciones sobre Barcelona: los episodios urbanisticos que han hecho la ciudad moderna*, Barcelona, Col-Legi D'Arquitectes de Catalunya, 2008.

Stadtplanungsamt Stadt Frankfurt am Main (edited by), *Dokumentation Altstadt. Planung Bereich Dom-Römer*, Frankfurt am Main: 2006

Stadtplanungsamt Stadt Frankfurt am Main (edited by), *Dom-Römer-Areal. Städtebauliche Neuordnung des Dom-Römer-Areals. Städtebaulicher Entwurf*, Frankfurt am Main, 2006.

Stimman H., Kieren M., *Die Architektur des Neuen Berlin*, Berlin, Nicolai-Verlag, 2005.



Anna Bruna Menghini
Politecnico di Bari, Italy

Squares and streets without town. settlement patterns in puglia's landscape: the borgo segezia.

The "luminous atmosphere" of Segezia

The Italian "new towns" made in the 30s are meaningful architectural interventions at the landscape's measurement. After them the theme of the planned cities and the territorial analysis will resurface only in the early '60s in the theoretical debate on the great architectural dimension, on the city-region, in Muratori's studies and in the projects of Purini, Gregotti and Dardi.
The experiment of the "new towns" encourages us to consider the urban planning as a large architectural project. This motivates us to consider the role of the architect as inventor of great signs in the slow writing of the landscape, as author of the formal and spatial foreshadowings in the urban and regional transformations, respect to the programming role of the city planner, a role unanimously recognized by the contemporary architectural culture.
A "structural" analysis of their founding principles in relation to the territory is useful to develop the models of settlement for the contemporary, within a historical and geographical perspective, approaching to the landscape with an architectural vision.
In particular the Borgo Segezia seems to be a rather significant and fruitful paradigm to investigate in the didactic field and research about the topic of the relationship between architecture and nature and between city and landscape, in the Puglia region.

Segezia is a small community center built between 1939 and 1941 near Foggia. Designed by the architect Concezio Petrucci, author of Pomezia, Aprilia and Fertilia, is part of the program of Appoderamento of the Tavoliere delle Puglie, a plan designed by the same architect. With this plan Petrucci can work with both territorial and architectural levels. This plan is based on the settlement and infrastructure principles of "Roman" matrix, as applied formerly in Pianura Pontina, and developed in the Tavoliere with a polycentric form.
The plan has its focus on the city of Foggia. From this center radiates a polycentric system of roads that innervates the surrounding area and complements the existing infrastructure with multiple rings. The flat topography facilitates the use of the soil consisting in a grid of quadrangular lots attested on the radial and annular roads. The area is measured by the module of the estates (ranging in size from 15 hectares for woody crops to 30 hectares for cereal crops), with 1384 farms attested on the roads.
In the nodes of the irregular grid, that absorbs the existing tracks and the natural lines of the ditches, are positioned three new urban centers (Segezia, Incoronata, Daunila) and three service centers .
The urban centers are grafted on the territorial axes, according to a cardo-decumanica logic, but they conform their spaces with a measure and a feature similar to the Medieval and Renaissance Italian urban tradition.
The municipal center of Posta Tuoro, later called Segezia, is located at 11 kilometers from Foggia, near the road to Benevento. It was sized for 3,000 inhabitants in the borgo and 6,000 inhabitants in the rural area, and was foreseen, unlike the Pianura Pontina and Sardegna, for the establishment of local settlers.
In the original project, described by the engineer Carlo Roccatelli in 1941, Segezia "extends along two orthogonal development directions, taking the form apparently theoretical and rather stiff, of the Greek cross, (...) that is linked to the ancient tradition of the 'castrense' or 'ippodamica' city. Substantially the flat arrangement of the terrain, requires regular forms (...), cleverly avoiding however the compact and closed feature of the grid, through the articulation of the plan. In fact, it was opened to the countryside, in the quadrants of the cross arms. In this way at the quadrangular grid or at another banal arrangement, has been replaced the fourfold system of neighborhoods arranged in a cross, giving rise to a modern star-shaped pattern whose functionality is evident" .
Marcello Piacentini, in the review «Architettura» in 1943, when the core of Segezia was completely built, clearly identifies the logic of the system and the relationship between the parties . Even he states that the plant apparently abstract, surrounded by a green buffer zone, is open to the countryside and carefully articulated: the patterns of the arms are different due to the orientation and its function.
The great territorial sign of the cross is a "strong form", but at the same time expresses a model of an open city which relates to the natural morphology, with paths, geometries and rhythms of cultivated land.
The cross is composed of a rectangular core containing a proportionally smaller rectangle corresponding to the void of the Square and of two areas tangent to the major sides (corresponding to the linear parallel buildings) and of two smaller rectangles constituted by a double foursquare (corresponding to the single-family houses) juxtaposed to the smaller sides.
The four axes that structure the plant is grafted orthogonally into the central space. Following Camillo Sitte's recommendations taken by Giovannoni, these axes are staggered so as to have the main buildings as backdrops. This creates a double perspective: on one side oriented towards the city center, focused on the visuals of the square, and on the other side oriented towards the horizon and emptiness of the countryside.
The central square is an elongated space (40x100 meters) defined by the fronts of special buildings and by the church square, whose bell tower is the centerpiece. It "presents the major side towards the Via Nazionale, so to ensure that the new nucleus can present itself to whom passes along that street a greater architectural consistency, even during his construction" .
Other smaller areas are articulated in relation to the main square, including the Piazza delle Erbe, with the arcade of the market.
The base idea of Segezia's planning, is the synthesis between the continuum of the tradition of Italian city, composed by streets and squares (present in the core) and the widespread pattern of garden-city (found in the parts organized with isolated houses) and the functionalist open scheme (evident in the serial arrangement of linear buildings of residences).

Staging of the vacuum

Like all "new towns" of the thirties, Segezia is designed as a great architectural composition, with a three-dimensional control. There is a complementary relationship between buildings and open space. The planimetric control is accompanied by the perceptual control of open spaces and architectural masses, similar to what Petrucci and Giovannoni did in the old towns with the "diradamento edilizio". The foreshortening allows the balancing of volumes and the choices of the plastic articulation.
The square is designed according to modern sensibilities as a dilated space that is made through the juxtaposition of isolated buildings. But they are not abstract volumes: the buildings are archetypes of Italian piazza's: the tower, the bell tower, the palace, the church, the arcade. They are attracted like magnets, because their relationship is not simply generated by physical proximity, but their strength derives from the belonging to the historical paradigm of the italian square. These buildings express their features through some constructive paradigms: the ashlar wall, the arched wall, the covered wall, the concrete frame as entablature. In Segezia seem to be "represented" the traditional building types: continuous and discontinuous systems, architraves and vaulted.
"The church is located beside the main square of Segezia, on a large square that lies in front of the facade and one of the sides which looks onto the square. This location allows maximum exploitation of the visual of the architectural masses of the temple from the square" .
"The bell tower, isolated in front of the church, tall and slender, dominates all the urban aggregation, and it is the compositional fulcrum of the square, around which all other buildings are grouped and linked in an unitary urban and architectural order. In the backdrop of the street from "agro", visible from far away, it will serve as a reminder and reference to the peasants of distant farmhouses" .
The Town Hall "due to the brown color of its brick structure, due to its greater height, due to amplitude of the rhythm, due to strong gleams of light and shadow" is distinct from simple white houses that surround it.
Then along the perimeter of the square there are other buildings that give continuity at the space: the buildings of the Azienda Agraria ONC, the Post, some stores with dwellings above, the restaurant-cafe and the Canonica. These buildings "while answering the demands of perspective that have been mentioned, are mutually arranged and proportioned so as to achieve a completed architectural order in both the enclosed space of the square and along the outer sides of the nucleus, (...) Along the sections of the cardinal roads, parallel at the national highway, are then arranged, outside the nucleus, the schools, the houses of employees ONC, the Police Station, the aid station and other stores with houses" .
To the continuous character of the square, composed of emergencies and minor connecting buildings, is opposed the serial feature of the urban fabric, an abstract pattern of lots with isolated and row houses, organized as open form in the arms of the cross. "With regard to the residential area, note the grouping of row houses, with gardens in front and vegetable garden in the back, in a large rectangular area including the city center, aligned according to the perpendicular at the state highway n. 90, and that of the combined houses with large gardens adjoining, in two smaller nuclei, placed on either side of it" . The houses are arranged according to the functional criterion of iso-orientation, regardless of the hierarchy of the streets.
The failure to volumetric and perspective control of the arms of the cross, unlike the square that is represented in more prospects, perhaps testifies a lack of confidence by Petrucci of the possibility regarding the completion of the plan. This is due to the fact that the construction of the residences was entrusted to private initiative. "Therefore, it is to predict a delay in the occurrence of private initiatives, will be essential that the building complex (...) it appears by itself organic and with any connection works, arcades, etc., and assume a certain surface development without appearing fragmented and incomplete" .
This is the typical problem of the measurement and definition of the margins in the open urban systems put on a flat morphology and without natural or artificial boundaries. Outdated the idea of walled cities and perched towns, these limits may be provided by the shape's geometry of the urban plan or by the buildings-enclosure. Or it can be hired the idea of the urban fragment in the landscape or of the countryside into the city, with an interpenetration between architecture and nature. The various projects of the competition for Aprilia show us different solutions in this regard.
The composition is characterized by the counterpoint of volumes in their material quality, by the relationships of light and shade, by abrupt steps between floors blinded by the light (church facade, white walls of houses) and the areas in deep shade (galleries of the Town Hall, bell tower, portals).
The hierarchy of the composition between the buildings is obtained by various expedients. "While in smaller buildings some elements of composition, such as socles and crowning, are constant and the windows are to follow a fixed module conferring unity of composition and homogenous rhythm to all, the main special buildings, and particularly the Church, the Bell Tower and the Town Hall, detach each with its own vibrant personality composition, giving the feeling of a certain multiplicity and heterogeneity, which does suit to such a vast building complex which is a Borgo " .
Through the explicit references to the classical Mediterranean tradition, Petrucci seems to evoke a kind of historical stratification, suggesting different languages. This eclecticism favors a formal definition of the character of each building and each space.
Piacentini emphasizes the will of Petrucci to give the borgo a "rural character", "not exactly traditional, but still of local infuence", more marked than in Aprilia and Pomezia. "A character that appears in the triple portico of the Town Hall, walled with fairfaced bricks, arched somewhat stocky, good-natured, sincere, very rustic: in the church, organic and solidly built, with a gracefully ornamented small facade" .
Segezia declares his belonging to the atmosphere of Apulia, without mimicry. There are quotes from some traditional elements (such as the dome cone of the sacristy that recalls the ancient "trullo". The environmental feature is enhanced by the use of local materials: stone of Trani and Apricena, bricks of Lucera.
The facade of the Church is in Trani stone slabs that "with thin arabesque, like in a jeweled fabric, embed colorful majolica tiles from Vietri". It is favored the use of traditional techniques limiting the use of concrete for the structure of the tower bell and the market. The tower bell, originally designed in stone with brick core, is made of reinforced concrete, and is divided into nine orders of loggias with lintels covered with slabs of Trani stone.
The use of architectural and construction types and materials of the local tradition is associated with attempts to upgrade to a functional and linguistic simplification.
If the conditions to autarkic prompt at the local and traditional culture, there is also an esthetic volition. In fact, even when using the concrete is compared with the forms and the syntax of the structures with entablature.
Segezia is one of the last "new towns" created by the fascist regime. Never completed the residential part of the original plan, only the square was carried out with its specialized buildings (church, municipal building, school, casa del fascio, market).
The modeling feature, typical of foundation towns is evident in Segezia, and wisely represented by Petrucci, in its unfinished finitude. In fact it remains isolated in a horizontal plane, and its skyline stands out clear in the Puglia countryside, surrounded by almost a metaphysical aura. Two different scales are contrasted so clearly: the urban scale of the square and the scale of the territory, without the mediation of the residences.

Contemporary Segezia: a settlement model

Segezia is today a small core in the countryside consisting of isolated constructions without a building fabric, a square without a town, strongly characterized by the church and the bell tower.
This is a great architectural work with a high esthetic value. It is a "manual" of the quote and the analogy. There is an assumption of atmospheres, environments seen through the mind's eye.
At present the village is in a condition of partial degradation. Besides the few permanent inhabitants, there is a substantial number of seasonal agricultural workers.
The crisis of the socio-economic and production system, on which was based this planning program has gradually deteriorated the village.
Unlike the "new cities" of Lazio, now embedded in a continuous conurbation, Segezia appears almost frozen in its original state. In both situations, however, are still visible the original interventions, as reassuring figurative lumps included in a futuristic urban chaos, or suspended in the quiet of the countryside, without its old rhetoric of fertility.
Undergoing a crisis the coincidence between production systems and settlement on which were based these models, can we re-establish a new balance that allows us to design the nuclei of living and the land with a single act, on the basis of a model capable of giving esthetic significance to the landscape?
Segezia, more than other modern planned cities which were later expanded, fixed in its original unfinished condition, can constitute a possible paradigm for the landscape's settlement. It suggests a meaningful way of "poetically living" the countryside in response to the widespread demand to resume a more direct relationship with nature.
Segezia shows that there are alternative ways to settle in the countryside, and the history gives us many examples (the farms, monasteries, castles, small villages), which on the outside are seen as great individuals, strong presence in the landscape, while on the inside are able to reconcile public and private dimensions of living.
Segezia provides an example of successful relationship between architecture and nature, for the interpretation of the flat landscape and of the horizon measured with the tower bell. The countryside comes into the square as a backdrop that limits the space and the city juts out into the countryside through the streets as a theatrical stage.
This large "architectural structure" is capable of measuring itself up to the dimensions of the horizon and with the "material empty" of the countryside, and at the same time to measure itself with the condition of "interior space". It may constitute an alternative model to the spread of single-family houses, with a capillary and pervasive action is gradually transforming the character and the measure of the Italian landscape.
Besides the problem of redefining the periphery and its margins, there is now a need to inhabit the country, in a more direct relationship with nature.
It's necessary today to face the void by giving significance and esthetic value, as it always has been in the past, to work with the empty space obtaining a condition of interior spaces.
Can we propose founding acts, in a complex situation constantly in transformation, where often strategies and interests of many parties collide?
We propose three possible models for the settlements in the countryside of Puglia:
- The " tower, castle or abbey": isolated emergencies
- The "masseria": agricultural textures and houses spread
- The "borgo": pieces of the city in the country.

The "strong form" can once again become a dwelling model at the scale of the landscape, in a fruitful dialogue between architecture and nature.

Anna Bruna Menghini
Politecnico di Bari, Italy

Notes

[1] The plan forecasts the creation of Segezia, Incoronata, designed by architect G. Calza Bini, and Daunilia, entrusted to the engineer D. Ortensi (not realized), and three service center: Giardinetto di Troia, Cervaro and Arpi (unrealized).

[2] Roccatelli C., *Segezia*, in «L'Ingegnere», 7, luglio 1941, p. 659.

[3] Piacentini M., *Il centro comunale di Segezia*, in «Architettura», VI-VII-VIII, giugno-agosto 1943, pp. 174-195.

[4] Ibidem, cit., p. 179.

[5] Progetto esecutivo del 3° lotto. Relazione (ACS, fondo ONC).

[6] Piacentini M., *Il centro comunale di Segezia*, cit., p. 180.

[7] Ibidem, p.179.

[8] Ibidem.

[9] In a letter from the president of the O.N.C. Araldo di Crollalanza to the architects committed to the urbanization in Capitanata, C. Petrucci, G. Calza Bini and D. Ortensi, dated February 1939.

[10] Piacentini M., *Il centro comunale di Segezia*, cit., p. 180.

[11] Ibidem, p. 174.

Legenda

Fig. 1
ONC. Ufficio per il Tavoliere di Puglia. Piano generale urbanistico, 1941

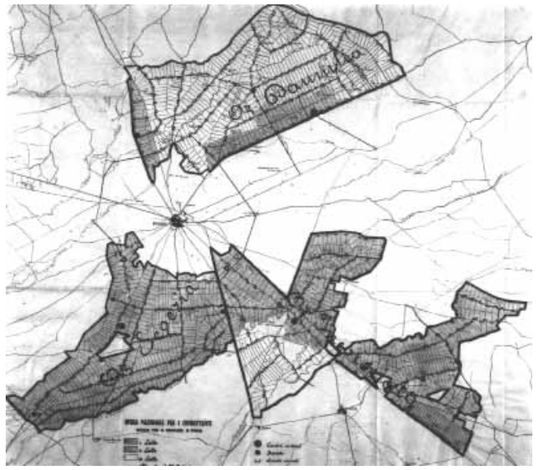
Fig. 2
ONC, Piano di Appoderamento del Tavoliere, 1941, Segezia district

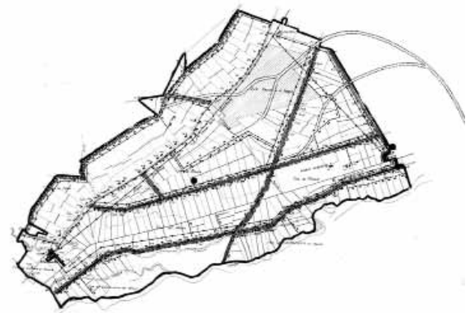
Fig. 3
C. Petrucci, Municipal center of Segezia, 1939, original plan

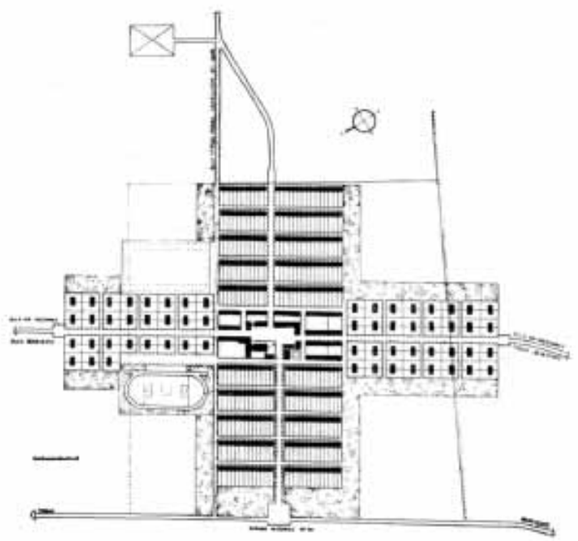
Fig. 4
C. Petrucci, Segezia, View from the Benevento-Foggia road, 1940

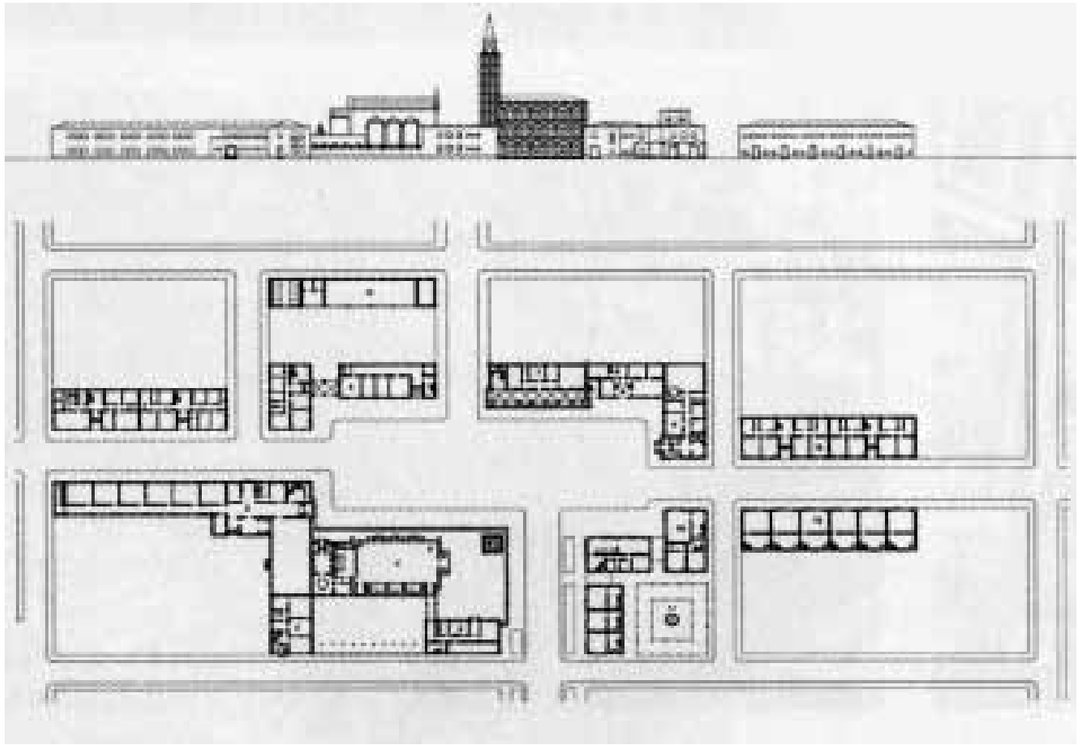
Fig. 5
Segezia, Plan of the Square, 1939

Fig. 6
Segezia, Town hall and bell tower









Ludovico Micara
University “G. D’Annunzio”, Italy

The Medina of Tripoli, Libya. The Future of an Urban Living Heritage and Cultural Landscape [1]

1 The Urban Structure of the Traditional City.

In the articulated structure of the plan of Tripoli, we can distinguish a series of urban patterns that can be referred to specific historical periods of the city (see Figure 1). The orthogonal grid of the streets recalling the classic Roman layout, based on cardo and decumanus; the organic pattern of the pathways generating the dead-end alleys of the Arab-Islamic city; and the polygonal geometry of the walls, typical of the 16th century system of fortification.
These urban patterns reveal, diachronically, the different moments of the complex formation and evolution of the city and, synchronically, suggest the composite character of the Mediterranean urban culture through the overlapping historical layouts.
In this sense, the Medina of Tripoli constitutes a typical case. Since the beginning of XVII century, the different communities were strongly integrated, generating a less rigid division between the quarters, where the walls were demolished (Cuneo, 1986, p. 393).

1.1 Continuous Fabric.

The compact character of the urban fabric is often pointed out to describe the morphological character of the Arab-Islamic medina. The satellite view exposes the compact built fabric cut through by courses, connecting the most important urban nodes. The recurrence, with almost no exception, of the court houses allows a continuous treatment of the street fronts that are interrupted only by secondary streets. The lack of openings on the street, except for the entrance door, marking through its decorative elements the importance and status of the owner, and the balconies that suggest Mediterranean aspects of life, accentuate the wall character of the street fronts.

1.2 Walls.

The Medina of Tripoli, as many other cities of the Islamic world, is “physically, sociologically, historically, and ideologically defined and determined by its walls” (O’Meara, 2007, p. 70). As a dar, a walled enclosure, the city’s ideological identity refers to an inviolable enclave; its physical identity stems from a contiguous cluster of walled enclosures; its sociological identity is determined by the functions of these enclosures. The walls constitute the raw material with which the medina is built. They define its essential and continuous character. The wall of a house is not only in common with the contiguous house, but defines also the adjacent street and public space.

1.3 Voids.

In the urban fabric of an Arab-Islamic city in the Mediterranean area, there is rarely a great void along the public street. The public gathering places are contained, in the form of courtyard or sahn, within the enclosures of the mosques. In a domestic dimension, the patio is the open space that gives light and air to the house. Other open spaces, of various dimensions, generally not formalized, often lay along the walls, such as cemeteries; or close to the city gates, such as markets and gathering places where urban and extra-urban people meet. The plan of the medina of Tripoli confirms the density of the fabric that has progressively filled in time all voids inside the walls, pushing the residual open spaces to the margins: the cemeteries along the walls to the north, the open spaces of the port along the eastern border, those of the castle, within and outside the walls to the south.

1.4 Courses.

The relation between the courses and the residential areas changes according to the types of urban fabric in the medina. In the fabrics developed according to the layout of the cardo-decumanic city the routes are tangent to the plots, generally rectangular and formed by two parallel rows of contiguous houses. In the fabrics developed according to organic pathways of the Arab-Islamic city, the residential plots are less regular and generally larger than the previous. In these areas not all the houses are laid along the courses and thus dead-end alleys or cul de sac are needed for penetrating the plot. The latter generate the tortuous and labyrinth-like character of certain sectors of the medina.

1.5 The Collective Institutions.

The buildings of the collective institutions are inseparable from the urban context creating, through their physical structural and functional continuity with their surrounding, the compactness of the medina (see Figure 13). The mosque, a public meeting place in occasion of the ritual collective prayer, is connected, through its various entrances, to the pattern of streets leading to other public spaces and to the residential enclaves. The Jama al-Naqah congregational mosque of the medina is surrounded, since centuries, by a number of suq and funduq, as is that of the Ahmad Pasha al-Karamanli mosque. This feature is a consequence of the waqf institution, consisting in the endowment of real properties by the founder to the mosque, the revenues of which are devolved for the maintenance and support of the building. At times a hammam or madrasa, as waqf properties, are adjoined to the mosque creating large religious, commercial and educational units (Micara, 1985).
In these urban complexes, the commercial streets are the endings of the territorial system of the caravan routes. These enter the Medina mainly from south, through the Bab el-Mensha and Bab el-Hurria gates, or from west through Bab el-Jedid and Bab Zenata. In the central part of the city these routes develop a continuous network of covered or open alleys, sided by shops specialized according to the handled goods. Whereas in the peripheral quarters the scattered system of minor or neighbourhood mosques, masjid, become the nucleus around which the urban fabric is organized.
At times, larger houses produce particularly interesting urban fabrics. This is the case of Arba’a Arsat crossing that is formed through 4 houses belonging to the wealthy families of the city, the Karamanli, Gurgi, and Mohsen. These houses in fact, integrate covered markets, aswaq bordered by shops and enhance the image of an emerging urban core. At times the houses attract special activities characterizing places of particular interest. Such were the houses of rich merchants dealing in land or maritime-trade in Shara Sidi Amura and Cushet es-Sefar, the house of Pasha in Shara Jama al-Drug, that previously served as Islamic court, and the houses turned into French and English Consulates, near the Marcus Aurelius Arch.

1.6 The Waterfront.

On the eve of the Italian occupation of Tripoli in 1911, the main public spaces and institutions, representing the different periods of urban growth, were concentrated along the strip of land between the ancient cardo and the harbour revealing the unending occurrence of major historical events on the same urban axis. In the Roman period, the Marcus Aurelius tetrapylon marked the very centre of the city. The larger dimension of the span of the arch, leading to the port, compared to the smaller one, parallel to the waterfront, reveals the primary role of sea-trade in Tripolis-Oea. In the Ottoman period the mosque and the palace of Dargut Pasha shifted the core of the medina southwards.
The progressive transfer of the centre of the city towards the Castle produced in later periods new central areas in Arba’a Arsat (Four Columns), at the crossing of the cardo with the second decumanus, and in the southern border of the Medina, marked by the presence of the suq’s, the Spanish and the Knights of Malta fortified castle and the Karamanli Mosque. The comprehensive character of the waterfront of the medina consisting of commercial areas (suq and funduq), religious institutions (jama, masjid and madrasa) and houses of various dimensions and importance produced a unique and complex urban fabric that, to this date, constitutes the liveliest and most animated part of the traditional city.

1.7 The Mediterranean Medina.

The Medina of Tripoli is not just another replica of the Arab-Islamic city and its peculiar collective institutions. Being developed on a pre-existing Roman city by different populations such as Arab-Berber, European and Jewish it has turned into an urban system which has its composite characters. Together with the prevailing use of courtyards, characteristic of Arab-Islamic cities, the buildings open also towards the public street through particular architectural elements such as arcades, portals, windows, terraces and balconies not always protected by mushrabiyya. It is possible therefore to speak of Tripoli, as a Mediterranean medina. This definition suggests a legacy of values of urban life and space common to the cities that face the Mediterranean Sea, where cultural relations and exchanges take place despite religious differences (Micara, 2008-2).

2 The Model of the Medina of Tripoli.

The model presented at the colloquium The Mediterranean Medina (Micara, 2009) recreates the state of the urban fabric of the Medina of Tripoli in 1911, on the eve of the Italian occupation of Libya (see Figures 3-4). This choice stems from the fact that the urban structure of the medina, represented in the plan by Fehmi Bey in 1910, was at the time, not yet deeply transformed. The walls, bastions and the castle delimited a compact fabric of the pre-industrial city grown around the collective institutions, typical of the Maghrebian arab-islamic urban culture: jami, masjid, madrasa, zawiya, suq, funduq and hammam. The waterfront and the port, where the fortifications are less substantial, generated the directions of the network of the principal urban courses. The research that has resulted in the model has two objectives: first, the study of the urban structure of the traditional city, the physical and dimensional characters of the buildings and the system of monuments and open spaces; second, to distinguish the characters and the quality of the urban transformations, by comparing the historical medina, as it was at the beginning of the twentieth century, to the contemporary one. The choice of creating a model, to better understand these issues, stems from the belief that the study of the city, especially that of the traditional Mediterranean world, should take into consideration not only the plan of the city but also its volumes, the tridimensional characters and the form of its prospects as a significant and relevant expression of an urban identity.

3 Transformations.

3.1 Formation of Voids in the Compact Urban Fabric.

The comparison between the Medina of Tripoli, as represented in the model, and its recent plan (Micara, 2005) evidences enormous transformations. The most spectacular of which is the progressive formation of great voids in the western part of the city, that compromises the extraordinary image of the compact fabric of the Medina in 1911. One of the principal reasons of this transformation is certainly the abandonment of the city by the Hebrew population, progressively, after the Second World War, and definitely, on June 1967 in the occasion of the Arab-Israelite war. The ghettos, hara es-saghira and hara el-kebira (small ghetto and great ghetto), already in poor conditions during the Colonial period, are evacuated, together with the synagogues. The houses no more inhabited, decade and fall down producing great voids and a progressive process of decay in the compact fabric (see Figures 5-6-7). In fact in this type of urban fabric each building is linked to the adjacent one through a physical, structural and functional continuity that is impossible to cut without compromising the survival of the system. The presence of a void in the continuous fabric produces, with a domino effect, other voids around it and thus propagates and amplifies the pathology.
A transformation producing more drastic effects is that in the north-eastern corner of the Medina, near the old lighthouse on the higher part of the city. The comparison between the recent plan and the situation in 1911 (see Figures 8-9) manifests two deeply different urban systems. While the old fabric, typical of the Arab-Islamic city, stems from the contiguity of inward-looking court houses, connected through a pattern of narrow streets, the today urban fabric has lost its distinctive physical continuity and embodies great voids, which are neither piazzas nor streets. The remnant houses, lacking the contiguity with other courthouses, open not only towards the interior court, following the tradition, but also outwards. Presumably the newly created conditions release the house from the compulsory open space in its core, substituting the openings towards the court, to attain air and light, with other ones. Thus the traditional court, is often transformed into the central hall of the house, covered and protected. This transformation does not regard this or that house, but is a general phenomenon that affects and modifies the original and genetic characters of the residential fabric. Such a mutation tends to reproduce almost automatically when urban conditions, similar to the above described, occur. This is the reason why the formation of the voids, are so destructive for the conservation of the compact urban fabric and produce, in time, a deep mutation of the relation between the housing type and the urban morphology.
Is all this a pathological crisis, that may be solved through conservation? Or is it a symptom of unexpressed values that tend to invalidate the traditional habitat? Why is it that, once, similar damage produced by wars, earthquakes and destructions were healed by recurring to the compact fabric of court houses, while today these wounds are accepted, maintained and become an opportunity to transform the basic elements of dwelling?
The study of these transformations, that deeply involve the residential system, becomes thus significant in twofold ways. On one hand, it evidences the more or less profound consume of an original model that has produced extraordinary urban clusters; on the other hand it reveals, together with a non implemented demand for a new quality of dwelling, certain trends, changes of direction that could be a prelude for new advanced models. The medina is no more … and is not still….

3.2 Medina and the Infrastructural Network of Courses.

Another important transformation of the 1911 city is the presence of a great highway that runs along the waterfront between the Medina and the port. This ring-road affects heavily the Medina. What had been, since the origins, formed as an urban fabric oriented towards the port, does not find today an access towards the sea, and is bounded and enclosed within a barrier, constituted by a highway that cannot easily be crossed (Micara, 2008-1).
The displacement of the commercial port towards east, where greater lands and infrastructural facilities are available, may prelude to the displacement of the beltway or to the reconsideration of its weight, through the creation of a tourist port, closely related to the residential rehabilitation of the Medina. The Medina could thus discover, by enhancing its links with the sea, one of its distinctive characters since its foundation.

3.3 The Covering of the Courts of the Houses and Modification of their Use.

The very structure of the urban houses in Tripoli, as in other Islamic medina-s in the Mediterranean, allows its transformation. In fact it consists in a series of non specialized rooms laid around the courtyard, differing from the western house (living room, bedroom, etc.).The courtyard assumes the role of open connective space for air and light (see Figures 10-11). In the two-storeyed houses, the stairway, placed at the corner of the court or, in the more monumental ones, centrally on one side, connects the court to an upper balcony. The latter gives access to the upper floor, though it does not run along all sides of the courtyard, allowing one or at times two rooms to face directly towards the courtyard. A feature, that gives a special character to the prospects of the court.
Such a system, in case of overcrowded housing, is easily adapted and transformed. It is enough to leave in common the entrance, court and stairway, in order to divide the functionally equivalent rooms of the house, between the families. In case there are more than one family in the upper floor, it is enough to extend the upper balcony by covering part of the courtyard to give access to the rooms to be further divided. This kind of transformation alters the spatial and symbolic significance of the house. The courtyard is no more the intimate domestic space, protected accurately from the street by the entrance device; it either becomes a common space for different family groups, where they meet, and their children play, or it is, in turn, divided through curtains or other temporary light structures. In this sense also the entrance looses its importance, as it is no more a device that protects the intimacy but becomes a way, a passage between the public street and the semi-public court. It is common to find the doors of these houses open all day, compared to the traditional closed impenetrable doors.

3.4 The Model as a Project.

The model of the Medina of Tripoli is not just an image of the past. It is a metaphor of a project. It can be assumed as an intentional and planned project for rehabilitation. A rehabilitation process that does not passively accept the transformation, and stimulates the complex harmony, between the exceptional density of public relations and the peace of private residential spaces, perfectly expressed by the physical continuity and the functional organization of the fabric of the Medina.

Ludovico Micara
University “G. D’Annunzio”, Italy

[1]This study is part of the up-to-date scientific results of “The Italian Mission for the Study of the Architectural and Urban Heritage of the Islamic Period in Libya”. The work of the Mission, carried out in accordance with the Italian Ministry of the Foreign Affairs, the Department of Libyan Antiquities and with the Organizational and Administrative Project of the Old Town of Tripoli, aims at the study of the buildings, the urban structure and the transformations of the Medina in order to identify the suitable strategies for its recovery and conservation.

Legenda

1 Historical urban patterns.

2 Satellite view of the Medina. A great ring-road cuts the relations between the urban fabric and the port.

3 View of the model of the Medina from south, with the Castle and the Jama Karamanli in the foreground.

4 View of the waterfront of the Medina in the model.

5 Urban voids in the present fabric of the Medina.

6 – 7 The space of the urban voids.

8 The urban fabric of the northern quarter of the Medina before the transformations.

9 The same quarter today.

10 -11 Courtyard houses in the Medina.

Bibliography

Cuneo P., *Storia dell’Urbanistica. Il mondo islamico*, Laterza, Roma-Bari, 1986.

Micara L., *Architettura e spazi dell’Islam. Le istituzioni collettive e la vita urbana*, Carucci, Roma, 1985.

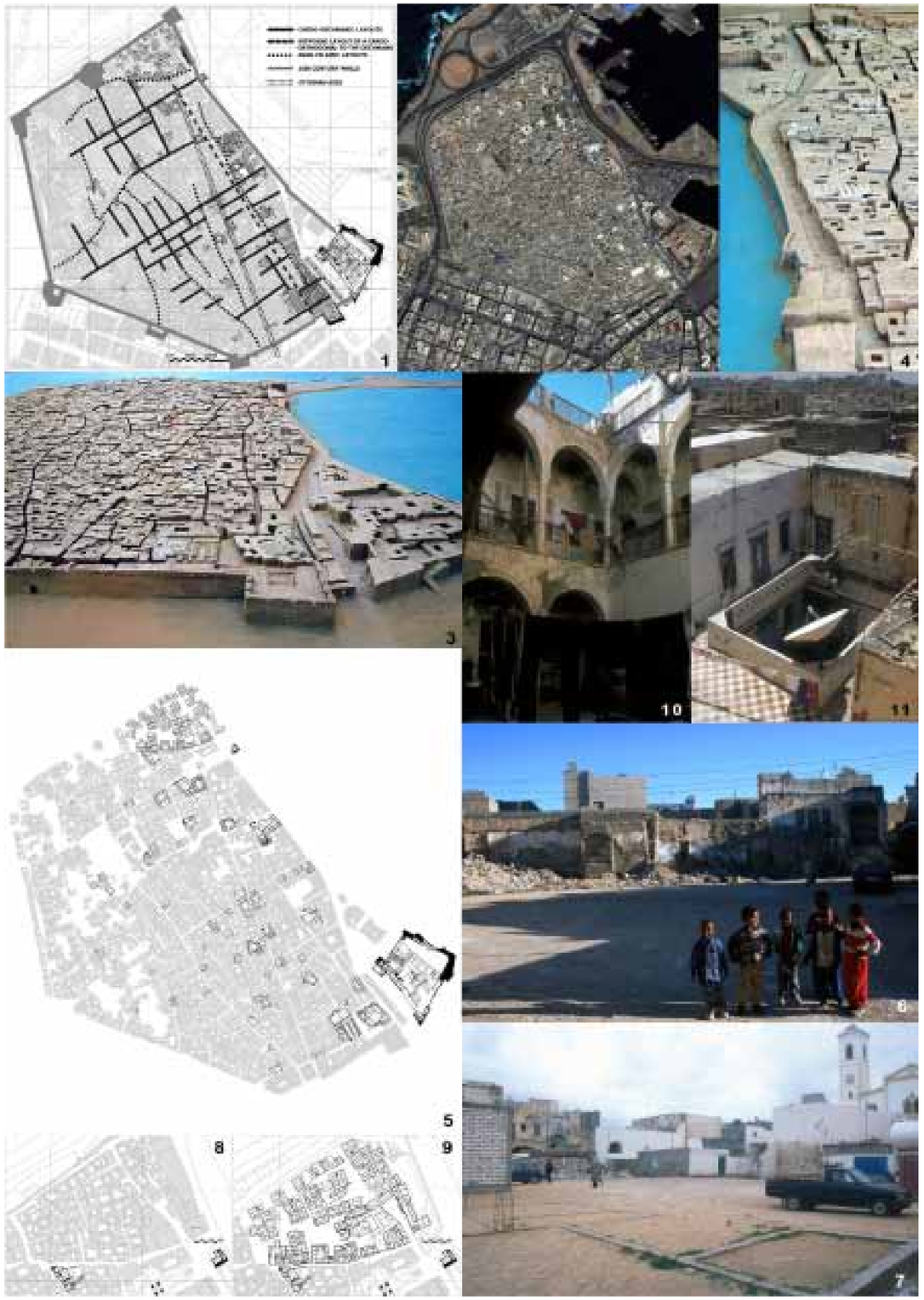
Micara L., *Tripoli Madinat al-Qadima: un tessuto urbano mediterraneo*, in «Ricerche di storia dell’arte», n. 86, 2005.

Micara L., *Tripoli: l’affaccio a mare di una medina mediterranea*, in «Portus», n. 16, 2008.

Micara L., *The Ottoman Tripoli: a Mediterranean Medina*, in S. K. Jayyusi (Ed.), The City in the Islamic World, Vol. I, Brill, Leiden-Boston, 2008.

Micara L., *The Model of the Medina of Tripoli: a Unique Contribution to the Understanding of the Mediterranean Cities*, in Micara L., Petruccioli A., Vadini E. (Eds.), *The Mediterranean Medina*, Gangemi Editore, Roma, 2009.

O’Meara S., *Space and Muslim Urban Life. At the limits of the labirynth of Fez*, Routledge, New York, 2007.



Carlo Moccia
Politecnico di Bari, Italy

Learning from Ksour
The valleys of the Drâa and the Ziz in pre-Saharan Morocco

The object of this research have been the forms of cities that follows each other along the *palmeries* in the valleys of the *Drâa* and the *Ziz* (pre-Saharan Morocco). Studying the morphologies of these cities we have tried to recognize their structural elements and existing relationships among them, but above all, the relationships that cities establish with landscape. The settlement "model" of those cities of pre-Saharan valleys in Morocco is strongly characterized by the relationship established amongst forms of "nature" (the "natural forms of nature" like orography and the "anthropic forms of nature" determined by human transformations) and forms of cities (the forms of *ksour*).
Nowadays the extraordinary beauty of this territory is spoiled by unfit ways of construction of contemporary urban outskirts and by neglected conditions both of cultivations in the *palmerie* and of ancient cities made in *pisé*.

But the principal aims of this research is not only to give evidence on a disappearing beauty or to awake (who has eyes to see this beauty) to operate for its preservation. Our aim has been above all to recognize the settlement relationship between *ksour* and *palmerie*, to recognize some "design paradigms" of general value. This knowledge can help us during a reflection on a central architectural matter: the relationship to be established between city and nature, or the relationship to be established between urban forms and forms of nature. This is the reason why (with the eye of someone who likes to do) we have looked at the nice unity existing in the landscape of the Moroccan valleys between city and nature. The system made by *ksour* and *palmeries* characterizes the landscape of these valleys and we have tried to learn the lesson of this perfect landscape.

The forms of landscape

The Drâa and the Ziz valleys are situated in pre-Saharan region, descending from the mountains of the Anti-Atlas. Those valleys are ploughed by the Ziz and Drâa rivers (the longest *wadi* of Morocco) that flow down toward south and, having crossed the desert under the ground, reach the ocean. The forms of nature in the Drâa and the Ziz valleys should be resumed in: a particular orography determined by erosive furrows of rivers (*wadi*), a complex "geometries" drawn by the hydraulic system (the *wadi* and the net of irrigation canals), a "weft" of different property field lines and different cultivations. In this kind of landscape like in a "palimpsest" of natural forms the Ksour are settled.

The *Ksour* are "elementary" city, constituted by an aggregation of houses, mosque and *hammam*. The *Ksour* are almost delimited by a towered city wall, always they are defined by a delimited and recognizable form.

To recognize relationship between orography forms, hydrography forms, cultivation forms and urban forms of the *Ksour*, (the *Ksour* that follows each other along the palmerie near the wadi), has been the first object of this study.
The *Drâa Valley* is a great valley, north/west – south/east oriented, delimited on the east side by the Anti-Atlas mountains. This valley, that starts from *Agdz* (settled at south of the important city of *Ouarzazate*) arrives to *Tamgroute*, extending itself nonstop for 180 kilometres. Its continuous form is, at the same time, articulated into territorial "rooms". These territorial "rooms" are delimited by furrow's erosive slopes and its ramifications toward the Anti-Atlas mountains. The "entrance doors" to these "territorial rooms" correspond to those curves that articulate the sinuous course of the *wadi*.

In the past the valleys were all cultivated, the vegetation were protected from the hot desert wind by the slopes of the valleys and all the fields were irrigated by the river's water connected with the hydraulic system of canals and *kettara*. The field division lines are still visible and articulated according to different geometries in relation to the steepness of the slopes: in those places characterized by a steeper slopes, the fields became narrower and assume a rectangular form disposing themself orthogonally to the slopes, instead of those places where the valley is more open wide and the land sloped gently down, the fields assume the square form and they draw a not- oriented grid. The geometry of the cultivated fields corresponds also to hydraulic reasons, because of the irrigation system of canals which departs from the *wadi* and branches itself in the *seguie* (main canals). The irrigation system is articulated into a net of secondary canals tangent at least to one side of the cultivated field. The *ksour* are settled inside or above these territorial "rooms", placed in the conspicuous points of the orography, establishing precise geometric triangulations and facing each other. The repetition of many Ksour along the river slopes defines a distinctive "metrics" of this landscape, characterizing the "rhythm" of construction of this landscape.

The geometrical forms of the ksour (cities) are often regular parallelograms. But the proportions of each sides of the parallelogram changes in relation with the orographic qualities of the place in which the ksour are settled. In those places characterized by a steeper slopes, somehow quite the reverse of the geometric principles adopted in the division of the fields, the longer enclosure side of each ksar is disposed in a parallel way with the slope. In those "plain" places (that correspondents to open wide places at the bottom of the valley or instead at the top of the acrocoris), the ksar presents itself approximately like a square with equivalent dimensions of the enclosure sides. The ksar is never crossed by territorial streets that run above the valleys. You could arrive to the city only passing by a secondary street that branches itself from the territorial one, and arrives to the main gate of the town. The other three gates of the town are directly connected with the cultivated fields in the palmerie.
Similarly it happens in the *Ziz Valley*: the *wadi*, starting from *Erachida*, descends to south/east and, after a run of 130 kilometres, reaches the desert region near *Merzouga*.

The territory of the *Ziz Valley* appears largely as a wide, arid and stony highland, "engraved" from the furrow of the *wadi*. The rich vegetation of *palmerie* grew inside this deep, and sometimes wide furrow. Forms of cultivated fields and geometries of the irrigation canals are analogous to those of the *Drâa Valley*. Along the inner borders of the *palmerie*, inside the furrow of the *wadi* or above its edges, the *ksour* are settled.

Also in this valley the repetition of delimited form of *ksour*, the sequence of those urban recognizable "unities", give sense and measure to the continuous form of nature, (constituted by the complex system of the *palmerie*). During the past, because of the population's growth, it was necessary to guarantee the ksar survival building another ksar defined and distinct from the ancient one. The new *ksar* was always built avoiding an interposition of a space between each other. This "empty" space, as it happens at *Tamnougalt* between the *ksar* and the *Kasbah*, or as it happens at *Ait Hamoou ou Said* between the *ksar* and the near *thigrimt*, it becomes a place of great spatial "tension".

This is the first lesson that we have learnt from the landscape of the Moroccan Valleys: the forms of the nature, the "originary" natural forms and also the forms of nature defined by the human cultivations in the *palmerie*, manifests its own beauty only if it is measured and kept in rhythm by the geometrical forms of the urban settlements. Between the "continuous" and "modelled" form of the nature and the "punctual" and "geometric" form of the cities it is established a precise aesthetical relationship, the beauty of this landscape is caused by the comparison between these two formal syntaxes. The "continuous" net of the fields delimited by irrigation canals that overlaps (reading) the morphology of the ground and the "discontinuous" dotted line of the "elementary" cities settled in the most significant points of the orography. The repetition of the "elementary" city creates a spatial "tension" amongst them, cause of the triangulations established in the void space of the *palmerie*. The delimited and finite form characterizes the city and allows us to recognize the sense and the value of the natural empty space.

For this reasons it seems unnatural the modern, amorphous and without limits "growth" of the cities with the outskirt nearby the wall of the principal *ksour* or the aggregations of "lost" houses without a start point and without end, along the main roads parallel to the *wadi*.

The forms of the city

The second footstep of the research has been to investigate the urban structure of the *ksour* with the tools of the type-morphological analysis, to recognize the constitutive elements of the "elementary" city. Through the analysis and the comparison of the urban forms of the *ksour* we recognized the types of the buildings, the grammar of aggregation in the blocks of the different building types, the geometries and the hierarchy of the streets. All of these trying to recognize the "soul" of these cities.
We can say that the most general character of these cities is the constitutive "internity" of the spaces. All the inner void spaces in the city appears like spaces of "subtraction." The main street spaces, delimited by the great "thickness" of the blocks, the spaces of the *cul de sac*, which penetrates the depth of the blocks, the space of domestic patio compressed by the "society of rooms" that are aggregated around it. All of these contributes to characterize the form of the *ksar* like a "great mass" furrowed by the voids of the streets and eroded by the spaces of the patios.

In some ways we can say that the urban forms of the *ksour* remember those of the ancient cities: the city is conceived as a system of contained enclosure spaces. All these spaces are connected by a hierarchized system of streets. A condition of "internity" characterizes the space of the "enclosure", both those domestic and private spaces and the collective ones. The houses, like in the ancient city, are delimited in itself and they don't establish any facing relationships with the space of the street. The introversion of the house determines an unusual aggregative structure inside the block. The block, delimited by the main streets, could reach in fact a considerable measure, corresponding to the aggregation of three or four building lots of houses. Both the houses settled in the internal building lots, and those settled outside on the perimeter of the block, are served by the system of secondary streets, the *cul de sac*, that "furrow" the block.

The streets, delimited by the "mute" walls of the buildings, cross the *ksar* branching themself according to a recurrent geometry. The geometry for the main streets is like a "tree" or like a "ring" and the *cul de sac* fits like a bayonet on the main streets. A dimensional hierarchy of the streets progressively seems to decline the passage from the external and collective place of the *palmerie* to the inside and public place of the city up to the inside and private place of the house. The alternation of light and shadow accompanies the progressive penetration inside the city up to the house's doors. From the principal streets of the *ksar* (along which are attested the entries to the mosque, to the *hammam* and the *fonduq*) flooded with blinding light, to the shadows of the *cul de sac* that conducts to the houses, almost entirely covered by the rooms on the superior levels of the houses that overcome the road like a bridge.

The forms of the house

The thick block constituted by the aggregate of many houses, that appears in plan like a mass "furrowed" by streets and *cul de sac*, appears in section "porous" and progressively "open" upward. The house itself is conceived as a "porous" and upward open space. At the ground floor the rooms are disposed around a centre, a *cannon lumiere* of small dimensions (delimited by four pillars), the rooms occupy almost entirely lot. Proceeding upward, the *cannon lumiere* becomes larger transforming into a patio set at the first floor. The rooms are disposed like "windmill" around the patio, settled in the corners of the building lot.

Sometimes, the rooms at second level cover the space of the cul de sac leaning out of the building lot of the house. At the third level the interior spaces of the house are reduced to angular turrets. From the turret rooms on the top you can admire the city below and the distant *palmerie*, regaining a relationship with the vastness of the external space. The typological characters are enhanced by the variations of the construction forms starting from *pisé* to *adobe*. The massive condition of the ground floor is effectively represented by the thicknesses of the walls and the pillars made in pisé. The four pillars set in the corner of the *cannon lumiere* reach a constructive dimension comparable to the dimension of the void space that they delimit.

The progressive "opening" of the house towards the external and bright space at the superior levels, it is defined by a precise typological relationships, it is also described by the decorative apparatus of the construction realized in *adobe*. The high levels of the house is realized in brick-walls made with the *adobe* method. The walls progressively reduces its own thickness.

We distinguish another building type called *thigrimt* that established a particular relationship with the urban morphology of the *ksar*. We find the type of thigrimt, especially, in the valley of the *Draa*. The *thigrimt* is like a little "castle" of three or four levels. It is an hollow block with a void "space of the light" along the vertical central axle. Its volumetric unity is emphasized also by four towers disposed into the corners. When the *thigrimt* is inside the *ksar* it is located in an autonomous position, frequently attested on the edges of the *ksar* and rarely melting with the fabric of the common houses. Instead when the *thigrimt* is settled, separated by a void space, near the enclosure walls of the ksar, it assumes the role of "counterpoint" with its verticality and proportions, compared to the horizontal proportion of the forms of the *ksar*. More often the position of the *thigrimt* inside the *ksar*, underlines the existing relationship between the system *ksar-thigrimt* and the form of the ground in the valley.

This is the second lesson we learnt from the analysis of the landscape of the Valleys: the city, strongly characterized by the density of the building construction and by the "porosity" of the "interior" spaces, always delimited from exterior spaces through the finiteness of its forms, it is a counterpoint to the wide open and continuous space of the *palmerie*. These two different characters of the spaces, the one of the urban internity and the one of the externity of nature, real collective space and "monumental" place of this territory, cohabit and connote the identity of those places of the city-nature by a dialectical relationship. The territorial model constituted by the *palmerie* and by the city-ksour has had great pervasiveness in definition of the landscape's form of the Moroccan Valleys. The Drâa and the Ziz valleys remains practically the same during the centuries, starting from the Almoravide domination, around 1050, up to the French domination of the first years of the 900.

We don't understand why this settlement - model could not continue to inform the construction of the valley's cities. In 2010 a Laboratory of degree in Urban and Landscape Design at the Faculty of Architecture of Polytechnic of Bari developed a project for the new *ksar* of *Erfoud*.

Basing the forms of the "new" town on the consolidated features and principles of the "old" one, protects the project from abstractness. The risk of a work like this, as of all those project who referred directly to the historical analysis and seek after a continuity of the architectural forms, is a sort of mechanicism of analysis and above all a determinism that some time is established between analysis and project. Thus we have nourished the awareness that the analysis is effectual when it is "tendential", in other words when it tries to demonstrates a formal principles. We also think that the project must have a value and responsibility of refunding this principle.

The architectural forms of the project aims to be contemporary. Nevertheless the description of the urban characters of the new *ksar* of *Erfoud* would coincide with the description of the most general characters recognized in the urban forms of the cities that we have analysed.

Bibliography

Soriano V., *Arquitectura de tierra en el sur de Maruecos*, Ediciòn Fundaciòn Caja de Arquitectos, Barcelona, 2006.

Salima N. *Art et architecture berbères du Maroc: Atlas et vallées présahariennes*, Edisud, Casablanca, 2001.

Mouline S., *Habitats des qsour et qasbas des vallées présaharienne*, Ministère de l'Habitat, Rabat, 1991.

Mimò R., *Fortalezas de Barro en el sur de Marrueccos*, Compania Literaria, Madrid, 1996.

Galdieri E., *Le meraviglie dell'architettura in terra cruda*, Editori Laterza, Bari, 1982.

Petruccioli A., *Il giardino islamico*, Electa, Milano, 1994.

Petruccioli A., *Dar al Islam, architettura del territorio nei paesi islamici*, Carucci editore, Roma, 1985.

Meuniè J., *Greniers cittadelles au Maroc*, Institut des Hautes études marocaines, Art et Métiers graphiques, Paris, 1951.

Jurgen A., *Wohn-und Siedlungsformen im Süden Marokkos*, Callwey, München,1982.

Jurgen A., Architektur der Vergänglichkeit– Lehmbauten der Dritten Welt, Staatliches Museum für angewandte Kunst, München, 1982,

Terrasse H., *Histoire du Maroc*, Editions Atlantides, Casablanca, 1950.

Terrasse H., *Kasba berbere de l'Atlas t des oasis*, Editions des Horizons de France, Paris, 1938.

Hoag J.D., *Architettura islamica*, Edizioni Electa, 1973.

Legenda

1. Draa Valley: ksour in Mezguita Palmerie
2. Draa Valley: ksar of Thissergat
3. Draa Valley: ksar of Ait Hammou ou Said
4. Tissergat ksar: second floor Patio-House
5. Tissergat ksar: main ring-street
6. Tissergat ksar: cul de sac






Calogero Montalbano
Politecnico di Bari, Italy

An integrated approach to urban transformation for polycentric development of settlement areas[1]

1. Background[2]
The historic urban areas are living organisms. Like a living organism they preserve memories of their past and the sequence of the actions and transformations that took place there. Like a living organism they change and grow according to the rules deriving from the physical context, and the specific historical and cultural identity. Often, the crisis of an urban area and its system of reference hide an alteration of the primary relationships (environmental, cultural, economic, social) that a settlement establishes in time, with the surrounding area. Increasingly, the contemporary globalized culture trying to obtain a new, simpler, economic and social development, favours rapid processes of industrialization and modernization that deeply alter the balance of the territories.
Thus the settlements lose the meaning of their bond with the natural environment and the traces of their history and alter their economic and productive processes forgetting their cultural and social identity, as well as, with time, with the abandonment, the neglect, the replacement of what is not recognized as a value, consuming their own resources (environmental and cultural).

2. The sustainability of traditional settlements
Especially in large historicized areas, the overlap in the same place of different processes (historical, social, economic), makes difficult to identify the principles and rules that have governed, over time, an area: the development of the urban fabric, the different architectural typologies, the agricultural production and the identities of the countryside, crafts, ...
This demonstrates how the historical settlements (particularly in the rural areas) have learnt over time to integrate the cultural imprint of the past, building progressively an identity, whose complexity is closely related to the type of the historical layers received. You can discover in this way under the name of “rural culture” some very different urban, architectural, productive and hand-crafted experiences, arising from the historical processes of sedimentation, different from place to place.
The forced process of socio-economic and cultural modern development (the contemporary global economic model of urban expansion and the enhancement of agriculture), the same in every place, often forgets these rules and seeks to impose solutions taken out of the context, motivated by the need of adaptation to the current time. Despite all, even when a historic settlement (particularly in the rural areas) seems to be on the verge of a collapse (under the weight of modernization), it can revive from its ruins, recovering, at least in part, the historical roots that have allowed it to exist up to now (the organizational structure of the urban fabric and the productive areas, the shape and function of the agricultural landscape, the cultural heritage).
The sense of sustainability, understood as the enhancement of local identity must reside in this concept. Through the identification of the characteristics of a specific territorial system and its traditional settlements, it is therefore possible to identify intervention strategies for the preservation and sustainable economical, cultural and social recovery of rural areas in low socio-economic growth, however characterized by a high environmental, historical and cultural value.

3. The research model
The traditional urban spaces, whose origins derive from the particular behaviour of the territory that hosts them, depend on it for the sustenance and for their growth, assuming a specific character that makes them unique and unrepeatable, like a living organism. The sustainable development of our settlements, therefore, inevitably passes through the control and management of local resources.
Thus the aim of promoting the integration of natural and cultural resources as new engines for socio-economic development of peripheral urban settlements through the implementation of design strategies, aimed at building environmental and cultural networks that interact with each other, increasing the levels of protection and productivity of local areas.
The “Applied Method for the Urban Landscape Design and its Environmental and Cultural Resources” aims at providing the public authorities a better understanding of the interactions present in its own territory between various types of resources. Therefore, it wants to be a tool capable of strengthening the operational capacity of local governments, of preserving and managing the historical and cultural settlements heritage, qualify food and wine productivity and enhancing traditional products. At the same time it must be capable to support the local growth and the innovation (urban growth, tourism enhancement, development of new productive activities, industrial growth), enabling to adopt specific rules and respect the constraints imposed by that particular area.

4. The territory of Ugento and its values
We are in Puglia, in the last ramification of the Ionic coast. The peninsula of Salento is an antique land, not wholly overcome by the hectic rhythm of the industrial development. Here the built-up areas are very numerous, though of different dimensions and shapes, distributed along the water line and the close inland. Some of these have a great past (we are in the area of “Salentine Greece” and of the Roman penetration) and are characterized by the presence of archaeological areas and monuments of great interest (above all in the Messapic and Roman phase), beyond a thick network of fortified farmhouses and sighting towers (above all Medieval). Some others, above all along the coast, are simple built-up areas deriving from the speculative policy of the 20th century, often interspersed in the area.
The Marina of Ugento appears to visitors as an antique hamlet, defended by the Medieval castle. The town, old Messapic centre called “Uzentum”, rises on a small hill that slopes to the sea. Along the coast you can find the centre of Torre San Giovanni, the marina of Ugento, and the coast centres of Torre Mozza and Lido Marini, that starting from the 1960s underwent some tourism aggressions without any rules.
In the in-between territory, among the coast centres and Ugento, a large diffusion of farmhouse structures that present at least two distinct morpho-typological connotations can be observed; they can be referred to temporal phases, basically different: the fortified watchtower farmhouse of the back coast and the farmhouses in the inland.
This system overlaps to a thick agricultural structure that is affected by the influence of the phase of the Roman domination and that probably affected the spatial organization of the territory and the strategic positioning of some farmhouse outposts. (Image 1)

The landscape of Ugento is very evocative: a thick pinewood runs out until the white and thin sand beach; low dunes, blooming of maquis almost lap against the sea. In this background a complex system of big canals and water basins occupy an area that was once invaded by marshlands, where malaria lived, as attested by the old toponyms (“Palude dei giunchi” and “Lacco della Marina” “Palude dei Samari”).
The interventions of drainage of the marshlands, dating back to the 1930s have completely changed the aspect of the coast near Ugento, but also contributed to create a new micro-environment, where cormorants, swans and a great number of fish and vegetal species have been taking refuge. In the area of Ugento it is thus possible to read the succession of the different habitats that, from the sea to the inland are structured along the long sand coasts, in the dunal and back dunal zone, in the wet area of the drainage basins, in the system of the “serre”,[3] in the maquis associated to the first morphological step, in the system of the holm oaks woods spread in the “gravinelle”,[4] in the olive cultivations.
These particular conditions brought some areas of the coast of Ugento to be individuated as a SIC area for 1199 hectares and, despite the often uncontrolled processes of anthropization and tourism exploitation, as the “regional park of Ugento”.

5. The interpretation of complex phenomena of anthropic space
Today all this has been seriously compromised and risks cancellation. Inappropriate urban development policies, a scarce attention to preservation of natural resources, the even more increasing use of chemical fertilizers for agriculture are unavoidably hurting biodiversity as well as the flora and fauna of relevant natural reserves; the water resources are jeopardized and the landscape disfigured, altering its original meaning and value. Also the cultural, architectural and historical value of urban settlements is strongly compromised. The lack of oriented actions of recovery and the diffusion of new building techniques (see the wide and often inappropriate use of reinforced concrete and steel) threaten more and more the cultural-historical value of these regions by altering the relationship between urban and natural traditional landscape.
In this way, the local identity as developing factor for socio-economic policies related to tourism and the enhancement of regional material cultural resources (monuments, landscape, farm produces and handcrafts) and non-material ones (artistic and gastronomic traditions), is getting lost, and so the tourist value.
To highlight these aspects a multilevel analysis finalized to map the transformations of the different systems / landscape (anthropogenic and natural) in the area of intervention was done, in order to recognize the specific features of the landscape under investigation, their level of sensitivity and the situations of crisis and decay that characterize them.

a. The cognitive analysis: The valences of natural and anthropogenic landscape
From the analysis of the anthropic context it emerges an area characterized by an articulated system of coast towers, small buildings (called casini), farmhouses, but also archaeological sites and noteworthy megalithic structures. The settlements of historic-architectural value recognized in the area are not adequately protected, risking in a short period the dispersion of this richness and the loss of their original relationship with the area.
Same problem for the environmental and landscape resources where the sand coastline, the water basins, the dunes, the “serre”, the “gravinelle” and the maquis are resources of extreme value but with a very high risk of alteration. (Image 2)

b. The vulnerability of the territorial system
The analysis about the environment put in evidence some processes of transformations, either referred to specific spots and areas that deeply changed, over the years, the shape of the environment, above all after the increase of the phenomena of anthropization, deforestation, back dunal desertification and coast erosion. The still present maquis areas are the result of a gradual and general process of degradation of the original Mediterranean forest (characterized by the presence of the holm oak and the kermes oak), attacked in the last decades by arsons, the uncontrolled deforestation, the grazing and the cultivations. Moreover we can observe water pollution because of the fertilizers (nitrogenous and nitrate substances) and the sewage system (the coast built-up areas do have not been provided with sewage systems) that, through the outflow in the basins and the sea, has caused the non-bathing of some coast stretches and the risk of the eutrophication of the basins.
In particular, it has been evidenced how the deep and uncontrolled anthropic aggression that the coast system of Ugento has undergone in the last decades – and that directly determined the alteration of the environment and the activation of strong degenerative processes of the environmental system – should be mainly ascribed to the intense urbanization and building expansion of the coast settlements and to the increase of unauthorized settlements. This uncontrolled town growth can be mainly associated to an excessive flow of monocultural tourists (only connected to beach tourism) in a rapid increase, but without any correspondence with a social, economic and cultural policy of these areas and that has contextually favoured a continuous and inescapable consumption of the territory and its landscape values.
This critical situation, evidently increased by a diffused temporary housing, creates strong impacts due to the important concentration of population during summertime, and to the consequent increase of the vehicular traffic along the main routes, with a series of issues correlated to the opening of road services, the multiplication of concessions for parking areas, the alteration of dunal bars, the increase of garbage and sewing products, but also the increase of water needs.

c. Zoning and intervention areas
As defined by the Issues Analysis, some specific lines of intervention or planning actions have been associated to the single landscape or portions of them; they aim at correcting the territory in order to allow the rebalancing of the relation among the environmental and cultural resources of the settlements areas.
The model has thus permitted to individuate the potential critical areas and the strength points that characterize the landscape observed (such as portions of landscape with a high faunal and naturalistic imprinting, areas of a high historical, architectural or archaeological value or areas with an agricultural or tourist potential, ...) allowing to plan specific restorative actions. (Image 3)

6. Strategic Plan: Master Plan
All the situations observed underline the need of a change of the social, cultural and economic model of managing the territory and above all, an urgent need of change the models of tourist exploitation currently in use, because of the excessive consumption of the territory and its resources.
The observation of the diffused degradation of the area of Ugento, but also the identification and the assessment of the present resources, have permitted to define a new project setting. The activation of processes of “sustainable” development of the territory has been made possible through the recognition and the strengthening of the landscape, naturalistic, monumental and archaeological network, already present but weakly structured.
In this sense some networks (such as the road, the hydrographic, archaeological, architectural and ecological ones) have been individuated in order to work and produce sensitive effects on the landscape system.
For the network of archaeological and architectural sites, it is possible to schedule actions of recovery on precise sites and requalification of some emergencies distributed on the area (the so called “specchie”, coast towers, farmhouses, barns, etc.) and partly available for the development of cultural systems and a new low-impact accommodation (ecomuseums, entertainment and games areas, “open-house” structures for social and tourist activities, diffused hotel with a low anthropic impact, services centres and tertiary infrastructures). All this can be a valid alternative and an integration for beach tourism, pushing in a consistent way towards its use in the whole year instead of a seasonal use and towards an expansion of the areas involved in the development processes, going over the bond and the pressure applied along the coastline.
The whole interventions to be realized on the natural system, can be divided in actions aiming at the safety regulation of the area and its recomposition (such as the interventions of drainage and renaturalization of the artificial basins, of the drainage canals and the ones flowing to the sea, etc) and actions of valorization of the degraded areas (such as the drainage of the area of the ichthyic centre) and the tutelage of systems with a high landscape value (such as the restoration of the dunal systems).
These interventions, fundamental in the system setting of the landscape of Ugento should be applied contextually to the recomposition of the infrastructural, anthropic and monumental system, on penalty of any action of tutelage and valorization, but also the impossibility of controlling the phenomena of regression of the landscape, whose cause, before being attributable to natural events, is the fruit of a wrong policy of management of the area. (Image 4)

7. A new policy of building management of the territory.
The project of the coast system of Ugento requires an action diffused above all to the anthropic permanences; in a particular way, on the development and the planning of the temporary building and accommodation building, but also on a strict policy of delocation of the forms of unauthorized building by now condoned and of a series of concessions (campings, park areas, etc.) that put more at risk the coast system.
Some particularly important instruments become those of the urban compensation, adjustement and negotiation. All this would allow to bargain, in presence of some coast sectors particularly important for the balance of the landscape, the sale of buildings that could become a part of the infrastructural system of the territory or instead, the demolition of those more invasive for the landscape structure.
This condition would permit to operate on the research of a more urban densification above all of the suburban realities, such as Torre San Giovanni, that involved by an uncontrolled process of growth, detects strong levels of discontinuity of the settlement fabric.
The optimization of the areas currently peripheral of Ugento and Torre San Giovanni can thus permit a resolution of the respective urban limits and the connection routes between the two settlements and in the meanwhile allow the definition of architectural types, that would solve the relation between city and the countryside. (Image 5)

In this logic some real housing models can be defined; they should be capable to reread the deep history of these territories, working in continuity with the historical shapes and the local materials. On a different plan, there has been an attempt to supply the needs of the territory strenghtening the peripheral settlements through the planning of compact blocks, derived by aggregates of units that, even respecting the dominant need for these places of a single family house, would not renounce to the social value of the urban aggregate as an alternative to the dispersion and the consumption of the territory. (Image 6)

8. Epilogue

This paper wants to demonstrate that the only way to the lasting development of contemporary settlements, and for this reason sustainable, is the rediscovery of the bond between urban space and the surrounding territory, the rediscovery of the specific connotations (historical and cultural) of a territory and how it provides the lifeblood to urban settlements, helping to create their specific identity and a vocation development.
In the meanwhile, through the vehicle of the valorisation, they want to obtain the whole opening and fruition of the territory and a rise of the life quality of the local community, allowing new forms of socio-economic development with a low environmental impact.
The proper control and management of cultural and environmental heritage can enable a sustainable socio-economic growth of our territories. Waive this means sacrificing the ability to act positively on the preservation of "nonrenewable" resources: our identity, our history, our culture.

Images

Image 1. Individuation of morphological bands related to different types of farm structures in the area included between Gallipoli and Salve and identification of the urban settlements on the base of the Borbonic Charter of the "Reign of Naples" dating back to 1825 (author: Montalbano C.) (Guaitoli et al., 2011)
Image 2. System of valences: Historical, Architectural and Environmental invariants (authors: D'Addabbo N., Guglielmi V., Laterza S., Milano A. M., Pizzi A., Regano F.)
Image 3. Analysis of the critical situations: Tables of the value/degradation of the Morphological System (a), Natural System (b), anthropic system (c). Each range of colour defines a different level of value and degradation.
The area analyzed shows a fragile ecosystems (wet and dunal areas) that for its lithology, hydrology, morphology and scarce vegetal covering is characterized by a vast "critical area" that coincides with the more anthropized part. Here the concentration of wells for irrigation and the continuous and uncontrolled pumping of water cause the salt contamination of the stratum, but also the soils sterilization, main causes of the desertification process. The coast shows itself as completely congested by a discontinuous urban fabric. Without any planning regulations and control actions there has been the development of urban settlements, accommodation structures and unauthorized structures, often aiming at exploiting in a massive and irrational way the coast for tourism; this led to the establishment of processes of transformation of the area that in some cases are irreversible. This process of anthropization may damage even the few areas still not interested by the sprawling urbanization, that need some measures of control aiming to hinder further processes of urban expansion. (authors: Binetti G., Marinelli M.T., Mastromarino V., Mokhtari M., Rizzi R., Todisco P.)
Image 4. The Strategic Plan. The role of the slow viability for the connection of environmental, historical and archaeological resources of the territory (authors: Binetti G., Marinelli M.T., Mastromarino V., Mokhtari M., Rizzi R., Todisco P.)
Image 5. Reading of the metric space of the peripheral area of Torre San Giovanni in order to allow the resolution of the urban limits and the definition of architectural types, that would solve the relation between city and the countryside (authors: Binetti G., Marinelli M.T., Mastromarino V., Mokhtari M., Rizzi R., Todisco P.)
Image 6. Definition of some real housing models that can be working in continuity with the historical shapes and the local materials. Structuring of the base aggregate forms for achieving a compact urban fabric, coherent with the Mediterranean urban tradition and energy-efficient. (authors: Binetti G., Marinelli M.T., Mastromarino V., Mokhtari M., Rizzi R., Todisco P.)

References

Assunto R., *Il paesaggio e l'estetica*, Giannini, Napoli, 1973

Cazzato V., Politano S., *Topografia di Puglia. Atlante dei "monumenti" trigonometrici: Chiese, castelli, torri, fari architetture rurali*, Congedo, Galatina, 2001.

Costantini A., Bolognini P., *Le masserie fortificate del Salento Meridionale*, Circolo Culturale Ghetonia – Calmiera, 1987

Costantini A., *Guida ai monumenti dell'architettura contadina del Salento*, Congedo, Galatina, 1996

Gennaio R., *Tra le dune e la macchia, i bacini di Ugento - Aspetti botanici, faunistici e paesaggistici*, Martano Editore, Lecce, 2001

Greco A. V., *Le bonifiche nella storia del paesaggio del Tarantino Sud-orientale*, in «Umanesimo della Pietra - Verde», n. 7, 1992

Guaitoli M., Pezzulla B., Scardozzi G., Petruccioli A., Montalbano C., Binetti G., *Contributo alla conoscenza dei beni culturali del territorio di Ugento*, Scirocco Editore, Ugento, 2011

Mazzino F., Ghersi A., *Per un'analisi del paesaggio. Metodo conoscitivo, analitico, e valutativo per operazioni di progettazione e di gestione*, Gangemi, Roma, 2002

Montalbano C., *Il Paesaggio delle aree umide costiere: strategie di analisi e progettazione per la fascia costiera di Ugento*, in Università degli Studi di Bari, «Environmental features and sustainable development of the albanian and apulian wetlands», Symposium Proceedings, Edizioni del Sud, Tirana, 2007

Montalbano C., *La Marina di Ugento e le sue aree umide*, in Monti C., Ronzoni R. M. (eds.), *L'Italia si Trasforma: Città fra terra e acqua*, SAIE -Cuore Mostra, Bema, Bologna, 2007

Montalbano C., *Un Metodo Progettuale per il Paesaggio Urbano: Il caso di Grottaglie (Taranto)*, in «1st International Congress: Architectural Design beetween Teaching and Research », vol. 6, Poliba Press, Bari, 2011

Novembre D., *Geografia del Salento. Scritti "minori"*; Congedo, Lecce, 1995

Orlando D., *Relazione in Classificazione delle opere di bonificazione delle paludi e dei terreni paludosi nella provincia di Terra d'Otranto*, Tipografia Gaetano Campanella, Lecce, 1885.

Patera S., *Salento: scenari della diversità. Possibili sguardi e nuove dissolvenze per un approccio policentrico allo studio del fenomeno Salento*, Amaltea ed., Lecce, 2008

Perrone R., *Le paludi del Tarantino occidentale prima delle bonifiche*, in «Umanesimo della Pietra -Verde», n. 7, 1992

Sigismondi A., Tedesco N., *Natura in Puglia. Flora fauna e ambienti naturali. Guide Naturalistiche*, Adda ed, Bari, 1990

Notes

[1] This paper is a summing up of the issues, methodologies and results stated in a book in press by the author.
[2] Assay is part of a research on the relationship between the city and the landscape carried out by the author in different years within European programs (INTERREG III A Programme -WET SYS B; SEE Programme - SWAN) in Mediterranean and Balcanic regions and in the currently underway enhancement project of Ugento regional park and coastal urban area.
[3] … The morphology of Salento is dominated by some very gentle hills, locally known as serre, which rise only a few tens of meters on the surrounding plain.
Martinis B., Lineamenti strutturali della parte meridionale della Penisola Salentina, in «Geol. Romana», 1962, pg 11
[4] Small gorges. "… grava, grave, gravinelle, graviglione […] derive from the same root of gravina and refer, again, to deep landforms of the ground surface …"
Parise M., Federico A., Delle Rose M., Sammarco M., Karst terminology in Apulia (southern Italy); in «Acta carsologica», 32/ 2 (2003); pg 73.
Site of Community Importance - Habitat Directive 92/43 of the UE

Giulia Annalinda Neglia
Politecnico di Bari, Italy

Process Typology and the Formative Processes of the Middle Eastern Cities Open Spaces

There are several ways to talk about urban landscapes and open spaces. We can talk about it focusing upon aesthetic considerations, investigating urban infrastructures, provisions and networks, examining the geometry of sites or the characteristics of buildings that shape the urban land, or taking into account aspects derived from sociological and psycho-perceptive analysis. We can also talk about the urban landscape as history, as stratification of formative stages: as a cultural system defined by the influence of different components (which can also be very heterogeneous), as human and cultural heritage of signs and actions not necessarily perceived by the sight or senses, but which deeply involves both the use we make of the places and the design of their development.
This paper aims to embrace the latter approach to the analysis of open spaces in a strong anthropic contexts, using as case study (which here is almost an opportunity to apply the tools of a particular method of analysis based on process typology) three cities of the Mediterranean Middle East: Aleppo, Damascus and Jerusalem. Here, because of the peculiar urban history, large (geometrical) squares, open areas or gardens date back to the great works of the sixteenth century and later. The structure of the most part of open spaces in the Middle Eastern historic city centers (medina-s) is instead represented by a network of routes with different hierarchy, which follow the typical "branch-like" structure of the Islamic viability (from the suq, a public street strongly characterized in a commercial sense, to the cul-de-sac, a private blind dead end entrance to the courtyard houses). For this reason we will consider as cases of application of our study the formative processes of some of these routes, corresponding to the typical open spaces of Middle Eastern medina-s: the suq, the street, the cul-de-sac.
Our "reading" or "interpretation"[1] of open spaces formative process of these cities will be meant as analysis of "structures"[2] (links between the elements that compose the urban fabric): as formative, transformative and stratification actions, also meant in a cross-cultural sense. Indeed, because of the complexity of these medina-s urban structures - whose history dates often back to 5000 years of uninterrupted building activity – to understand the characteristics of open spaces it is necessary to take into account not only their visible form, which is mainly Ottoman, but all the phases of formation and transformation (including those pre-Islamic or pre-Medieval).
In this essay, therefore, we will try to reconstruct some formative processes, which are examples of rearrangements that took place even over a very long period and from which - due to their complexity – suq-s and shara-s (main streets), streets and cul-de-sac-s derive. These are examples of structures that - at first sight - may seem spontaneous and unplanned but, instead, come from typical transformation logics of re-use of ancient structures and reorganization of urban fabric, open spaces and courtyard houses of the Middle Eastern medina-s. This is the attempt of this paper: to interpret the typical behaviors of some Mediterranean Middle Eastern medina-s open spaces (such as suq, shara, street and cul-de-sac) in order to outline their processes of shaping. To this end some examples of streets formation at Aleppo, Damascus and Jerusalem will analyzed: some of them were formed spontaneously, some others as transformation of ancient structures, others as transformation of buildings into aggregates of buildings.

Study methodology
The complexity of the Middle Eastern cities public open spaces derives from the relationship between the elements that make up the building fabric (aggregates of courtyard houses and religious, public, commercial buildings) and the structures of connection between them (suq, shara, cul-de-sac). This relationship hasn't to be interpreted as a mere sum of sets of buildings and "urban voids" (as the streets, the squares and the open areas - when seemingly unplanned - must be relegated to a sort of "third urban landscape"[3]) but as a "structural relationship" between elements (buildings) and structures (open areas), which depends on the leading spatial models both at the moment of the formation of open spaces and in their successive stages of development or transformation. Because of this complexity, their characteristics shall be decoded by means of an analysis that takes into account the close relationship existing between the form of the open space and the aggregation of buildings that determine that form: as there can't be buildings without access road (suq, shara, alley, cul-de-sac), there can be aggregation without public (maydan, garden) or private (courtyard, end of the cul-de-sac) open space of connection. Accordingly, we can try to outline the characteristics of these open spaces by a reading of their formative phases at the neighborhood scale, in which we delineate the close relationship existing between form and structure, given by the aggregation of the built environment.
This interpretation – which starts from the identification of homogeneous structures at the base of the current conformation of urban spaces – will be carried out following the urban studies methodology developed in Italy since the 1960s by S. Muratori and his School[4] and stems from the hypothesis that the history of a city is "written" within its building fabric. Therefore, according to such theory, it is possible to "read" the different forms of the construction process of open spaces within the structure of the built environment; forms can be associated - by means of logical and typological reasoning - to the various historical phases of their evolution. This system - defined by historical, human, geographic interactions - derives from even more complex relations, which are within the logic of aggregation of building types.
In this paper we will analyze some case studies, which are typical examples of these formation processes. We'll examine the structuring of suq and shara as transformation of Roman colonnaded streets (which is typical of all the most important historical Middle Eastern cities); the formation of routes as Medieval re-use and transformation in urban fabric of the large open areas innermost the monumental buildings of the ancient world; the formation of blind alleys as densification of courtyard houses building fabric of pre-Islamic or Ottoman origin. The reference scale for this reading – which will be based on the identification of the elements of the urban morphology that make readable typical formation processes of building fabrics and open areas – is that of the aggregation, or of the neighborhood - the basic unit of the urban fabric - from which derives the structure of open areas, public and semi-public spaces and distributive systems within the building block. In particular, the following cases of formation will be analyzed:
- formation process of suq and shara from a colonnaded street. In the hierarchy of the configuration of streets and, in the logic of gradual transition from public to private space - which is typical of Middle Eastern Islamic medina-s - they represent the first level of routes or the "matrix route"[5] (main continuous route whose layout shapes the form and structure of the built environment, and therefore precede the formation of the urban fabric). They tend to connect the most important urban "nodalities" or hubs (gates, bridges, squares) or "special buildings"[6] (public and religious buildings) and to be marketed.
- formation process of streets in sizable empty enclosure. "Special buildings" influence not only the layout of routes (their formation or transformation) attracting them; they also shape the structure of the building fabric in cases in which they are occupied and re-arranged according to new settlements models. Is this the case of sizable empty enclosure of the ancient world (temples, amphitheaters, theaters) which have been re-occupied by housing in Medieval times. The layout of the urban fabric built within their limits is influenced by the structure of the streets formed inside and around them.
- formation process of cul-de-sac. In the structure of the Mediterranean Islamic medina-s building fabric we can read the traces of the process of densification and "medievalization"[7] that brought to the formation of alleys and cul-de-sac-s. Even though the densification of the building fabric, from a sparse courtyard houses structure, is a common process in the building fabric of all Medieval cities - given the encircling walls and the increasing request for housing by a growing population - in the Islamic cities the social structure based on the clan strengthened this process by densifying the building fabric in the innermost zones of the aggregates, by the progressive subdivision of the original courtyard house lots, and the formation of typical systems of access and progressive entry to the dwellings (cul-de-sac and dog-leg entrances). These systems represent the narrowest levels of the branch-like viability that starts from the main route system and penetrates the aggregates of residential buildings.

As part of an interpretation of the open spaces characteristics, we must also recognize the process of transformation of the "basic building"[8] (courtyard houses) into urban fabric - which is the process of changing scale – which denotes different hierarchical roles of the spaces towards the urban organism.

Damascus and Aleppo: Processes of formation of suq and shara from colonnaded streets.
Many among the most important routes of Damascus, Aleppo and Jerusalem medinas result from processes of transformation of ancient structures. Two examples, Suq al-Medina in Aleppo and Sh. al-Qaimariyya in Damascus, refer to the transformation of Roman colonnaded streets. The outcome of this process varies in the two cities, according to the role that these streets had into the Medieval urban organism.
The central suq of Aleppo (Suq al-Medina) links two territorial routes that had a key role in the city urban history: the end of the route to Antioch to the caravan route pre-existing the foundation of Aleppo, which crosses the city from northwest to south-east and is tangent to the citadel. Nowadays it is made of two, three or four parallel routes defined by series of aligned shops.[9] While the fourth of the parallel routes was built in Ottoman epoch, when the big khans were constructed in the heart of the medina, the formation of the first three, came about analogously with the process of congestion of the colonnaded street of Laodicea by the Sea (Sauvaget, 1934). This process, which occurred identically for Jerusalem (Suq Khan As-Zeit) and Damascus (Suq al-Hamidiyye) and that can be read in nuce in the structure of the colonnaded streets of Palmyra and Apamea, was due to the edification of commercial cells within the central and the lateral carriageways, starting from the area at the back of the Great Mosque and involved the entire length of the street, from the Roman triumphal arch (the present-day mosque of ash-Shuabiya, whose remains are near Bab Antakia) until its end at the foot of the citadel (the acropolis of the Hellenistic–Roman city). (Fig.1)
Sh. al-Qaimariyya at Damascus represents an example of formation of a shara from a colonnaded street. Its present state originates in a "medievalization", started in the Byzantine period. Unlike what happened to the colonnaded streets of many other Syrian cities, here the space between the columns only in very few cases was filled with commercial cells: the peripheral location of this route in respect to the political and business centre of the Medieval city - the area around the Great Mosque - meant that in Medieval times the road space was occupied by residential buildings, which are, accordingly, very small in size. (Fig.2)

Damascus: Processes of street formation.
An example of medieval formation of routes inside and around a sizeable empty enclosure is the area around the Great Mosque of Damascus, which was built inside the Roman temenos of the Temple of Jupiter Damascenus, a large enclosure of 350x240 meters. The reading of the urban fabric within the temenos boundaries allows us to speculate on the formation of the Medieval and Ottoman streets in this area. The distance between Souk Assagha and Nour ed-Din ash Shahid Streets is of 71 meters: this probably demonstrates that the formation of these routes is attributable to the Roman times. Different is the story of the routes that - departing respectively from Souk Assagha and an-Natta Street - converge towards M. Assaghh Street. These are two curvilinear paths that start from the temenos gates and avoid the Great Mosque. They can be date after the construction of the Umayyad Mosque and correspond to people's habit to diagonally cross the areas remained free around the mosque inside the temenos. The formation of first route has influenced the shape of the Azem Palace building fabric, which is Ottoman; the second the formation of the interstitial building fabric along the route connecting an-Natta Street to M. Assaghh Street, and which constitutes the backbone of the south-eastern quadrant of the temenos.
To the north of the Great Mosque, another curvilinear route – which avoids the mosque and which is the continuation of al-Amara Street, converging towards an-Natta Street – borders the north-eastern quadrant of the temenos, delimiting its extension. (Fig.3)

Aleppo and Jerusalem: Processes of cul-de-sac formation.
The reading of the structure of aggregates in the Aleppo medina allows us to speculate on the processes of formation of cul-de-sac and alleys. The Bab Quinnasrin district is emblematic to illustrate the process of cul-de-sac formation as densification of an urban fabric made up of sparse aggregate of courtyard houses: along the main axis of the neighborhood, it is readable the presence of some "planned building"[10] and "connecting routes",[11] which were planned in pre-Islamic phases of city structuring. It is immediately evident, for instance, that a road connecting a route designed in Hellenistic epoch (corresponding to the southward extension of Suq al–Kassabiya leading to the mosque of al-Kuhtali) to a "planned building route" of the Roman urban development (connecting the Hammam al-Malaha to the gate to Chalcis) is located at 71 metres from the main axis of the Roman enlargement. From a structural reading of the building fabric it clearly emerges that this route is one of the "connecting routes" attributable to the Roman planning that, after the medievalization of the fabrics occurred in later phases, was subdivided into two aligned cul-de-sac-s. In the same structure of the Bab Quinnasrin neighbourhood, we can read other examples of alleys and cul-de-sac-s derived from the transformation of the pre-Islamic urban structure: the route branching off the axis of Bab Quinnasrin heading towards the mosque of ar-Rumi, the route branching off the same axis heading towards the Hellenistic city centre (corresponding to the south-oriented lengthening of Suq al–Kassabiya leading to the Mosque al-Kuhtali), and the route tangent to the Bimaristan al-Arghouni.
Unlike what happened in most Mediterranean cities, in the urban fabric of Old Jerusalem the process of formation of cul-de-sac hasn't stopped at the end of the Ottoman world. Here, because of well-known socio-political vicissitudes, this process of transformation and densification of the urban fabric has gone on. An important moment into this process is attributable to the population explosion that affected the Palestinian quarter of the old city after the second intifada - though this process started earlier - because of the densification of the Palestinian housing in north-eastern districts of the walled city and hence in an already densely built area. In these years, the population explosion has triggered a process of densification of courtyard dwellings because of the new rooms (real residential units) built inside the original lots. This phenomenon has led to a sharp acceleration in the formation process of new cul-de-sac into the courtyards of the houses, which nevertheless continued to preserve the main features of their structure. In almost all the cases courtyards were transformed into the distributive systems of monocellular units, built encroaching the former empty space: real cul-de-sac inside the limits of the former courtyards. Two houses in Barquq Road represent this process of residential building fabric densification and formation of semi-public open spaces into the former private spaces of the courtyard. The first one presents a total encroachment of the courtyard – and the subsequent transformation of an open private into a semi-public space - obtained by the construction of a continuous built surface that has almost totally occupied the space of the courtyard, leaving its memory in a path of adduction and distribution of the new rooms. The second is a case of transformation of the courtyard from the private space of a totally introverted type building - which is the courtyard house - to a cul-de-sac, the semi-private distributive structure of the housing units abutting on it. (Fig.4)

Conclusion
The reading of the formation process of open spaces described so far for the cities of Damascus, Aleppo and Jerusalem are certainly not exhaustive of all the processes of formation of the Middle Eastern medina-s open spaces. They, however, showed a close relationship between the formation process of the aggregates structure and their open spaces. The identification of the elements of the urban morphology that make readable typical behaviors of building fabrics and open spaces allowed us to speculate on their formative process.
From this interpretation came out that while some of the most important routes of these medina-s, because of their own urban history, result from processes of transformation of ancient structures, the outcome of this process varies, according to the role that the streets had into the urban organism and the specialization of buildings along them. Besides, the specialization of buildings can steer the formation of routes, attracting them. Finally, the process of formation of cul-de-sac-s and alleys is not related to a specific phase of the Islamic medina-s urban history (i.e. early-Islamic, Medieval, or Ottoman) but is instead related to the process of densification of the urban fabric: it is the direct result of the gradual congestion of the neighborhood and the consequent subdivision of the lots into smaller dwellings.

Giulia Annalinda Neglia
Politecnico di Bari, Italy

References
Auld S. and Hillenbrand, R. (eds.), *Ottoman Jerusalem The living city 1517- 1917*, London 2000.

Bahat D., Rubinstein T., *The illustrated Atlas of Jerusalem*, New York, Simon & Schuster, 1990.

Bejor G., *Vie colonnate. Paesaggi urbani del mondo antico*, Giorgio Bretschneider ed.,Roma, 1999.

Ben-Dov M., *Historical Atlas of Jerusalem*, Continuum, New York – London, 2002.

Berardi R., *"Lecture d'une ville: la médina de Tunis"* in: L'Architecture d'Aujourd'hui n. 153, 1970-1971, pp. 38 –43.

Berardi R., *Alla ricerca di un alfabeto urbano: la medina di Tunisi* in "Necropoli" 9-10, 1970, pp. 27-48.

Berardi R., *Saggi su città arabe del Mediterraneo sud orientale*, Alinea, Firenze, 2005.

Burgoyne M. H., *Mamluk Jerusalem. An architectural study,* World of Islam Festival Trust, Jerusalem, 1987.

Burns R., *Monuments of Syria. An Historical Guide*, Tauris, London, 1992.

Caniggia G., *Lettura di una città: Como*, Centro Studi di Storia Urbanistica, Roma, 1963.

Caniggia G., *Strutture dello spazio antropico*, Alinea, Firenze, 1976.

Caniggia G., *Ragionamenti di tipologia. Operatività della tipologia processuale in architettura*, Alinea, Firenze, 1997.

Caniggia G., Maffei G. L., *Interpreting basic building*, Alinea, Firenze, 2001.

Clément G., *Manifeste du Tiers paysage*, Editions Sujet/Objet, Paris, 2004.

Cuneo P., *Storia dell'urbanistica: il mondo islamico*, Laterza, Roma, 1986.

Dodinet M., Leblanc J., Vallat J.-P., Villeneuve F., *Le paysage antique en Syrie: l'exemple de Damas* in "Syria" LXVII, 1990, pp. 339-355, pl. 1-12.

Gaube H., Wirth E., *Aleppo. Historische und geographische Beiträge zur baulichen Gestaltung, zur sozialen Organisation und zur wirtschaftlichen Dynamik einer vorderasiatischen Fernhandelsmetropole. 2 Bde*, (Beihefte zum TAVO, B, Nr. 58), Franz Steiner Verlag, Wiesbaden, 1984.

IRCICA (ed.), *Al-Quds / Jerusalem 2015 Program, 2008 Report*, IRCICA, Istanbul, 2009.

Jayyusi S. K., Holod R., Petruccioli A., Raymond A. (eds.), *The Islamic City in History*, Brill, Leiden, 2008.

Neglia G. A., *Medina. Notes of the Urban Landscapes of South-Eastern Mediterranean Cities*, PolibaPress, Bari, 2009.

Peters F. E., *"City planning in Greco–Roman Syria. Some new Considerations"* in: Damaszener Mitteilungen, 1, 1983, pp. 269-277.

Petruccioli A., *Dar-al-Islam, Architetture del territorio nei paesi islamici*, Carucci, Roma, 1988.

Petruccioli A., *"La permanenza della città classica nei tessuti arabi del Mediterraneo"* in: Khanoussi M., Ruggeri P., Vismara C. (eds.), *L'africa romana. Lo spazio marittimo del Mediterraneo occidentale: geografi a storica ed economica*, Carocci, Roma, 2002, III, pp. 2267 –2278.

Petruccioli A., *New Methods of Reading the Urban Fabric of the Islamicized Mediterranean*, in Nasser N. (ed.), Built Environment, vl. 28, n. 3, Oxford, 2002.

Petruccioli A., *After Amnesia: Learning from the Islamic Mediterranean Fabric*, ICAR, Bari, 1997.

Petruccioli A. (ed.), *Environmental Design 1-2*, 1993. "Urban Morphogenesis, maps and cadastral plans".

Sauvaget J., *Esquisse d'une histoire de la ville de Damas* in "Revue des Etudes Islamiques", VIII, 1934, pp. 421-480.

Sauvaget J., *Le plan de Laodicée-sur-Mer* in "Bulletin d'Etudes Orientales", Tome IV, Damas, 1934, pp. 81 -114.

Sauvaget J., *Le plan de Laodicée-sur-Mer (Note complémentaire)* in Bulletin d'Etudes Orientales de l'Institut Française de Damas, Tome VI, Damas, 1936, pp. 51-52.

Sauvaget J., *Alep. Essai sur le développement d'une grande ville syrienne des origines au milieu du XIXe siècle* (texte, album), Geuthner, Paris, 1941.

Sauvaget J., *Le plan antique de Damas in Syria*, XXVI, 1949, pp. 314-358.

Watzinger C., Wulzinger K, *Damaskus: die antike Stadt*, Vereingigung wissenschaftlicher Verleger, Berlin, 1921.

Will E., *Les villes de la Syrie à l'époque hellénistique et romaine* in Dentzer J.-M., Orthmann W. (eds.), *Archéologie et Histoire dl la Syrie II. La Syrie de l'époque achéménide à l'avènement de l'Islam*, Saarbruecken, 1989, pp. 223-250.

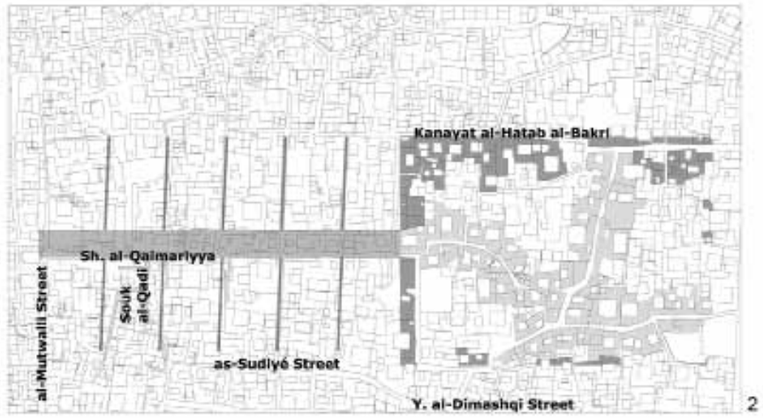
Images

Fig.1. Aleppo. Suq al-Medina
Fig.2. Damascus. Sh. al-Qaimariyya
Fig.3. Damascus. Area around the Friday Mosque
Fig.4. Jerusalem. Houses in Barquq Road

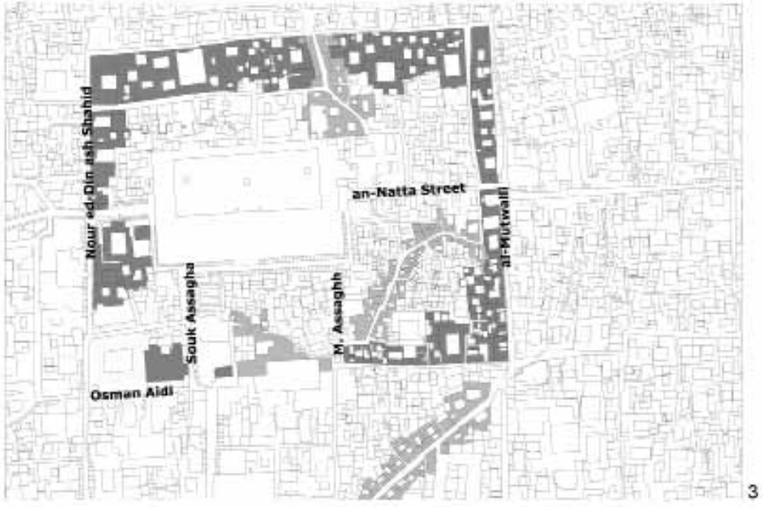
Notes

[1] "The comprehension of reality is never a neutral recording. It is always a dialectic relationship between an interpret and the object. In particular it implies a synthesis between the "intentions" and the "methodological tools" of the former and the "attitude" and the "code" of the latter. The yield of interpretation depends on the correspondence between the interpret and the object qualities." See: Caniggia G., Maffei G. L., Interpreting basic building, Alinea, Firenze, 2001, p. 244.
[2] A "structure" can be defined as "the relationship rule between the elements that compose an urban or architectural organism." See: Caniggia G., Maffei G. L., op. cit., p. 244.
[3] Paraphrasing the definition "third landscape" made by Gilles Clément in Clément G., Manifeste du Tiers paysage, Editions Sujet/Objet, Paris, 2004.
[4] See, in particolar, Caniggia G., Lettura di una città: Como, Centro Studi di Storia Urbanistica, Roma, 1963; Caniggia G., Maffei G.L., op. cit.; Petruccioli A., After Amnesia: Learning from the Islamic Mediterranean Fabric, ICAR, Bari, 1997.
[5] A matrix route is "a route crossing through the territory to connect two poles in the most direct way". See: Caniggia G., Maffei G. L., op. cit., p. 248.
[6] "Non residential buildings obtained by the application of critical consciousness to basic building, from which they clearly derive and maintain memory". See: Caniggia G., Maffei G. L., op. cit., p. 248.
[7] The "medievalization process" is a process of spontaneous transformation and recasting or subdivision of the urban fabric and building plots. It often occurs by occupying the open and public areas of the city. See Caniggia G., Maffei G.L., op. cit.; Petruccioli A., op. cit.
[8] "The materialization of the sequence of building types determined according to spontaneous consciousness, within the same cultural area". See: Caniggia G., Maffei G. L., op. cit., p. 246.
[9] For the process of suq formation see Berardi R., "Alla ricerca di un alfabeto urbano: la medina di Tunisi" in: Necropoli 9-10, 1970, pp. 27-48.
[10] A "planned building route" is a route "orthogonal to the matrix route when it is started to devote to building activity the borders of the latter. To optimize land use the distance between a planned building route and the following one corresponds to back-to-back arrangement of the building lots." See: Caniggia G., Maffei G. L., op. cit., p. 248.
[11] A "connecting route" is a route that "connects two successive planned building routes, usually orthogonal to each other, to facilitate the relations between different pertinent strips." See: Caniggia G., Maffei G. L., op. cit., p. 249.

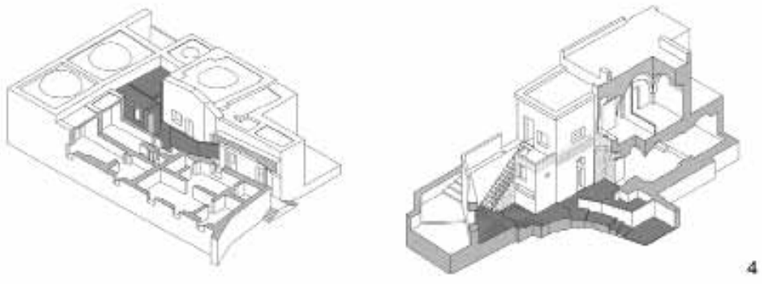
1



2



3



4

Farida Nilufar
Bangladesh University of Engineering and Technology, Bangladesh
Nuzhat Zereen
Architect

Process of Morphological Transformation and the Emerging Pattern of Built-Form along Gulshan Avenue in Dhaka

1.0 Introduction

Dhaka, the capital of Bangladesh, has grown to present state through different phases. Gulshan, one of Dhaka's most prominent residential areas, bears significant marks of urban transformation along its spine - Gulshan Avenue. Indeed, urban transformation is a widespread phenomenon which is mostly visible through its morphological components. To study the process of morphological transformation it is important to take into account all those factors which are involved in shaping the built-environment – firstly, the spatial and physical components of urban area i.e. building, plot, street and open space; and secondly, the economic and political factors that eventually guide and translate the process. This paper attempts to study the morphological transformation with particular focus to the emerging pattern of built-forms along Gulshan Avenue in Dhaka, where a prominent residential area has turned into a major commercial sub-center within a period of 40 years.

2.0 Development of Gulshan Residential Area

In 1959, with the preparation of Master Plan, Dhaka city experienced the first comprehensive and formal planning effort to develop planned residential neighbourhoods. In 1961 with 290 hectares of land, Gulshan residential area was developed, particularly for high ranking government and non-government officers and diplomats. The main arterial road, 90–100ft. wide Gulshan Avenue, divided the whole area into two parts, intersected by two commercial hubs, Gulshan Circle-1 and Gulshan Circle-2. (Fig.01) During 60's, only a few single or two storied buildings were erected. After liberation in 1971, following increased demands for plots, the residential area was further extended towards north and finally included 986 acres of land (RAJUK, 2002). The serene, low density character of this area at the earlier phase of development, has very well transformed now into high-density, high-rise residential area. This physical change of the built-environment is further associated with the changes in land-use, together with the economic growth of the country.

2.1 Transformation of Spatial grid and ensuing Movement pattern

Syntactic study[1] on the spatial structure of Gulshan area and its relation to the overall grid of Dhaka city shows that throughout the years of its evolution, Gulshan area gained global importance following the shifting character of the global core of Dhaka (Khan, 2008). Three segments of Gulshan Avenue were more connected within and outside the locality and invited more movement. Being more integrated within the whole urban structure, Gulshan Avenue gained higher accessibility and global importance – the two main criteria for the development of central city functions along this road. As an embedded system Gulshan area could not develop as a distinct residential area and non-residential functions invaded into the area gradually. Such spatial patterns seem to have been very suggestive for the functional and movement pattern along this avenue (Chowdhury, 2006).

2.2 Conversion of Land-use and associated Building Rules

Residential plots along Gulshan Avenue exhibited changing pattern of built-form and land-use since 1980, with the beginning of real-estate business as a major economic activity. Around 1985–1986, land sub-division and construction of six storied residential building was legitimized by the authority following the pressure from influential land owners. With the growth of Dhaka, changes in the economic environment brought significant changes in the urban land-uses in different parts of the city. Consequently, land-use conversion in Gulshan area started prominently in the early 1990s, particularly along Gulshan Avenue. Plots along Gulshan Avenue had experienced a revised building rule (RAJUK, 2000) in which one plot deep residential plots were permitted for commercial use with a conversion fee of 25% of prevailing land value. However, neither the plots were considered as commercial, nor were the buildings allowed to be designed as commercial buildings. As a result, residential buildings were developed under the guidelines of Building Construction Act (1996) and submitted for conversion of use. Thus the rule basically legalized six storied residential buildings along the avenue for commercial use. However, another clause allowed a conversion of building use from residential to commercial with a fee of TK.100 per sq.ft of the total floor-area. This allowed another option to pay a fee for the conversion of building use, which was much less than the fee paid for land-use conversion. Land owners mostly opted for the second option. During 2004–2005, RAJUK approved construction of eight storied buildings along the avenue for a very short period under political pressure. Under this rule, a few buildings were raised to eight storeys high.

With the introduction of new Building Construction Act (2006), plots along Gulshan Avenue were declared as commercial plots where a maximum of 150 ft. high commercial buildings with a FAR of 50% was allowed. It has been reported that there is a pressure for the approval of 20 to 22 storied commercial buildings along this avenue. This indicates colossal changes in the built-form and in the overall physical environment in the near future.

3.0 Methodology

The process of morphological transformation is measured here through the following variables: spatial structure; land-use and its intensity; plot configuration and pattern of sub-division or amalgamation; built-forms with their morphological properties. Analysis of these variables in each morphological phase of development provides significant information on the spatial, physical and functional attributes of this area.

Based on pattern of development and availability of corresponding maps, four different phases of development are identified: PHASE 1 (1973 - 1985); PHASE 2 (1997 - 2002); PHASE 3 (2004 - 2005); and PHASE 4 (2008). Maps for phase 1 and 2 are obtained from the DLR & S. For phase 3 and 4, maps from Dhaka City Corporation (DCC) are used. It is to be noted that phase 3 and 4, at the interval of five years, show significant changes in the built-form. During this study, information has also been gathered from a field survey conducted along Gulshan Avenue in 2008 (Zereen, 2009).

At first, plots along the entire length of Gulshan Avenue were assessed through different phases of development to get a general overview. The study identified the built-forms of four main category; such as: the original built-forms - still in residential use; the original built-forms renovated for new use; plots that underwent a complete transformation in configuration, land-use and built-forms and also those plots which experienced a transformation of the built-form with the same residential use at a higher density. The plots along Gulshan Avenue that had experienced transformation in all the three aspects, i.e. built-form, land-use and plot configuration, have been identified (41 nos. out of 200 plots). A detail survey was carried on 25% plots of this category (i.e. 11 case studies) to capture the transformation at plot level.

4.0 Morphological Transformations and Built-Form Analysis

To reveal the underlying process that had enforced the morphological transformation with the emerging built–forms in Gulshan area, the functional and physical aspects are analyzed below.

4.1 Land-use Transformation and its extent

Land-use data was collected under two primary category: residential and commercial. All the emergent functional activities, like retail, restaurants, health facility, financial services, corporate offices, foreign investors' offices, were broadly classified into a single group of 'commercial' land-use. This reveals the nature of land-use transformation simplistically as an important variable of morphological transformation.
The study reveals that 21% of the plots along Gulshan Avenue experienced complete transformation of built-form as well as land-use; and 51% of the plots exhibits land-use transformation only, either retaining the old building or through renovation. New buildings appeared on 28% of the plots only. The new use represented either a higher order activity (i.e. from residential use to commercial use) or an increase in intensity of use by the same activity (i.e. high-rise residential apartments). However, the most dominant aspect here is the transformation of land-use from residential to commercial. This data supports that Gulshan Avenue provided the option for increased accessibility, thereby seems to invite non-residential uses. Commercial functions like retail, markets, catering and entertainment that usually characterize the local centers are not prominently located along this road. Rather, there is a growing concentration of activities which are considered as performing 'global city functions' by their contribution towards linking national economy to world economy. Out of the total 102 nos. of transformed land-use, 69% are corporate office functions i.e. a huge concentration of administrative functions. Activities with economic command and control functions traces an invasion of central business activity along Gulshan Avenue, thereby, signify the development of Gulshan Avenue into a sub-centre in the functional context of Dhaka. (Fig: 1)

4.2. Pattern of sub-division and amalgamation of Plots

The present study analyses the evolution process and uncovers the morphological phases of individual plots, to investigate how these plots adapted to emerging changes. (Fig 1.1-1.4)

PHASE-1 (1973 – 1985): Initially the blocks were arranged in grid-iron pattern with large sized plots varying between 20 to 30 kathas[2]. At this stage, the undivided land at the northern part were further sub-divided into large size plots to cater increased demand. Some blocks were densely sub-divided with relatively small sized plots and delivered among new users. Most of the blocks along Gulshan Avenue were divided into two rows of plots which backed on to each other, and some blocks were formed with large size plots arranged in a single row, facing the main access road. The number of plots along Gulshan Avenue was 145.

PHASE-2 (1997 – 2002): Some large blocks had revised plot division in second phase. In cases, two or more plots were amalgamated to make a large plot and some large plots were sub-divided into two or three properties. Where needed, by-lane was added to access the rear plots. From this sub-division, a dense urban form started to evolve with a total of 186 plots along the avenue. The pressure of population growth and widely available housing finance were the two major reasons for plot sub-divisions. In this phase, commercial use was mainly limited around Circle-1 and Circle-2. Although some plots have experienced commercial invasion partially towards the avenue. This pattern of plot sub-division influenced the subsequent development and redevelopment of the plots along Gulshan Avenue.

PHASE-3 (2004 – 2005): The map of 2004 -05 shows radical changes of plot configuration as compared to earlier maps. In this phase, the successive division of plots was observed at an accelerated rate while some plots which were sub-divided in the previous phase were seen to be amalgamated again. There were 200 plots which are about 40% more than the initial number of 145. These plots faced enormous transformation because of high land value and economic importance.

PHASE-4 (2008): A number of plots that underwent successive sub-divisions in earlier phases have continued to exist as valuable parcel of land for commercial development. Initially, these plots were not planned for high-density urban purposes. These were elongated with narrow sides towards the avenue. At present stage, the plots along this avenue are more open to modifications to accommodate a higher intensity of land-use which allowed high-rise buildings with maximum land coverage. This situation is further aggravated by land speculation and lack of clear and consistent urban planning policies.

A detail investigation into the case studies (Table: 01) reveals that plots were sometimes sub-divided to increase the building density or to optimize the land-use. Again some plots were amalgamated to obtain a large parcel of land to build large scale commercial buildings. Therefore, the process of physical transformation continued to exist together with the functional transformation. At present the total number of plots remained 200 as before. However, the process of plot sub-division or amalgamation here seems to exhibit a process of adaptation to changing need. As Goodall (1979) defined, this is an indication of the effort to maximize the economic return to land owners and land-users. The survey shows that most of the large undivided plots at the initial phase, with an area ranging from 20 to 27 katha, experienced a process of sub-division at the later phases, resulting in an average area from 10 to 15 katha. This specific pattern of plot sub-division and amalgamation that affected their size in turn influenced and shaped the emerging built-forms.

4.3. Morphological Properties of Built-froms

City blocks are solid components of morphology and buildings are the basic element of urban blocks. A quantitative characterization of morphology of these built-forms is carried out in the present research through Built-area, Open area, Building to land ratio (BTL)[3], Mean height of buildings[4], Mean volume of buildings[5]. This part of study tries to explore if the plot size and restructuring of land-use had any impact on the changes in morphological properties of built forms. (Table: 1)

Table: 1 Morphological Properties of Built-forms (Selected case studies)

Case Study Plots			PHASE – 1 (1973 – 1985)			PHASE – 2 (1997 – 2002)			PHASE – 3 (2004 – 2005)			PHASE – 4 (2008)		
Sl No.	PLOT NOS	TOTAL LAND AREA (sft)	BLDG. FOOT PRINT AREA (sft)	BTL (%)	OPEN AREA (%)	BLDG. FOOT PRINT AREA (sft)	BTL (%)	OPEN AREA (%)	BLDG. FOOT PRINT AREA (sft)	BTL (%)	OPEN AREA (%)	BLDG. FOOT PRINT AREA (sft)	BTL (%)	OPEN AREA (%)
1	1	15 120	3190	21%	79%	4 900	32%	68%	4 900	71%	29%	4 900	71%	29%
									5 810		23%	5 810		23%
2	12	16.471	6380	39%	61%	3.871	24%	76%	3.871	24%	76%	13.388	81%	17%
3	65	17.866.40	Vacant plot		100%	6.772	38%	62%	6.772	38%	62%	13.000	73%	11%
4	91	19.466.00	Vacant plot		100%	Vacant plot		100%	8.598	74%	18%	8.598	74%	18%
						2.910	26%	20%	2.910		20%	2.910		20%
						2.910		30%	2.910		30%	2.910		30%
5	93	19.715.60	Vacant plot		100%	2.653	13%	87%	2.653	13%	87%	15.706.50	80%	15%
6	99	19.706.40	8.365.50	42%	58%	9.853	50%	50%	Under construction			17.743.60	90%	10%
7	136	14.650.40	Vacant plot		100%	Vacant plot			12.780	87%	13%	15.781	74%	19%
8	132	17.535	Vacant plot		100%	2.552	15%	75%	14.880	85%	15%	14.880	85%	15%
						Vacant		100%						
9	108	14.973.76	6.386	43%	57%	3.364	38%	65%	8.850	74%	18%	8.100	69%	18%
						2.280		45%	2.280		40%	2.280		40%
10	168	14.888.60	5100	34%	66%	5.241	35%	65%	5.241	35%	41%	6.551	75%	25%
									4.568		23%	4.568		23%
			Vacant plot		100%			100%	5.974		22%	5.974		22%
11	153	22.995	Vacant plot		100%	2.450	10%	68%	6.972	80%	66%	6.972	80%	21%
						1.701.36		78%	1.702		78%	1.702		78%
Legend:			Residential Use						Commercial Use					

Source: Field Survey, (Zereen, 2008)

At present, in all the cases, plots are occupied by large commercial buildings with a BTL varying between 60% to 90%, while open area decreased to a value between 10% to 40% as compared to the initial stage. This means an increase in built-area and built-volume with a decreased percentage of open area is evolving. On an average, at the initial phase the BTL was 33% which increased to 79% in 2008, leaving an average of 21% of open area. The decreasing rate of open area represents an intensive urban growth with massive agglomeration of built-forms. Besides, the higher value of BTL indicates that throughout the different phases there has been an increased demand for accommodation in this area. Buildings from the initial phase are replaced by large commercial buildings to maximize economic return from individual plots. To satisfy the economic criteria and specific demand by changing activity pattern high-rise high-density built-forms received priority over low-rise residential buildings. Therefore, extension of built-form has been seen to be related to the transformation of land-use and changing demand on individual plot. (Table: 1)

It has been recorded that the mean height of buildings has increased from two storeys to seven storeys, which signifies a gradual shift towards high-rise structures. This is also indicative of the higher intensity of land-use, i.e. every single building is intensely used, which is imposed by the changes in demand and economic value of land in this area. The mean volume of buildings has increased by 86% at present, resulting in a suffocative building density.

The floor-plates of the buildings in the Figure-ground map (Fig: 2) highlight built-forms and spaces, and convey the spatial structure of the area. It shows how the spaces of Gulshan are progressively filled by larger building area forming a dense urban form. The density is further increased by constructing

Farida Nilufar
Bangladesh University of Engineering and Technology, Bangladesh
Nuzhat Zereen
Architect

high-rise structures on these plots. Real estate activity is seen as a secondary economic activity for converting the density of this area. This figure depicts radical transformation of the spatial character of Gulshan area during the study period.

4.4. Demolition and Survival of Buildings

The process of adaptation of the built-forms to changing need and to serve the economic aspect of an urban area is an important criterion that is manifested along Gulshan Avenue. Changes within the existing stock of buildings and redevelopment represent complementary adjustments in the process of urban growth (Goodall, 1979). Gulshan has undergone substantial changes through replacement of the original use of building by another use with little or no modification of the original structure. Demolition of original buildings and construction of new buildings for new use was also in practice. This pattern of demolition and survival of original built-forms is a phenomenal aspect. (Table: 2.)

Table: 2 Survival and Demolition of Buildings along Gulshan Avenue

Survival and demolition of buildings (1973 – 2008)					Total no. of plots including sub-divided plots (2008) = 200 nos.		
	Phase 01	Phase 02	Phase 03	Phase 04		Total Nos.	as a percentage of Total
New construction	7	112	78	2	Total construction	267	35% more than no. of plots
Buildings demolished	-	45	23	7	Buildings demolished	85	31% of tota construction
Buildings survived	-	30	119	180	Buildings survived	115	43% of total construction
Source: DLR&S, DCC Maps and Field Survey, 2008					Plots with building demolition	74	28%

In phase 2 (1997–2002) remarkably only 40% of buildings of the previous phase was survived, whereas about 60% was demolished. In some cases original residential buildings proved to be uneconomical within an interval of 10 to 15 years to their users and new buildings appeared to serve their potential economic use. It gives an indication that this process was primarily stemmed from external economic pressure rather than obsolescence or physical deterioration. Plot size also affected rebuilding rate; as large size plots along Gulshan Avenue always provided a higher potential for intensive restructuring of use. As observed in two cases, buildings in large plots were demolished twice to accommodate the changing demand on land-use. Again large plots sub-dividing into a number of parts allowing commercial development on the front part, which reflects the effort to adapt intensive land-use on a single plot.

5.0 Discussion and Conclusion

In the growing city of Dhaka, the spatial forces imposed by the configuration of the grid and the economic forces acted together to activate the process of morphological transformation by their effect on accessibility and land-use along Gulshan Avenue. Commercialization of residential plots along this avenue is accompanied by changes in the intensity of land-use and specific demand on space requirement by individual land-uses. These changes acted as a vital force in transforming the plot configuration and built-forms. A process of adaptation to changing need is revealed through plot sub-division and amalgamation and also by the pattern of building demolition and survival. The resultant effect is the development of a new physical environment with a transformed urban status.

The role of this area as a whole has been modified as a structural transformation of the economic base through the shifting of central business activities towards this area. The transformation of Gulshan Avenue into a commercial sub-centre resulted in the spatial proximity of 'global players' and local inhabitants. The global market force and the increasing globalization clearly played a role in the transition of this area. In most cases, it seems that here buildings have been regarded as an investment in plant or publicity, something transitory to be discarded, destroyed even, when its immediate purpose is served.

Bibliography

Chowdhury, Urmee, 2006, Road Hierarchy Analysis for Planned Residential Area of Dhaka City using Space Syntax Methodology: Case Study of Gulshan Area, Unpublished Term paper, Urban Morphology-I; MUPR, BUET, Dhaka.

Goodall, B, 1979, *The Economics of Urban Areas*, Pergamon Press, Oxford, New York.

Hillier, Bill & Hanson, Julienne, 1984, *The Social Logic of Space*; Cambridge University Press, Cambridge.
Hillier, Bill, 1996, *Space is the Machine*, Cambridge University Press, Cambridge.

Khan, Nayma, 2008, *Study of Morphological Transformation in the Planned Residential Areas of Dhaka City*; Unpublished M. Arch. Thesis; Department of Architecture; BUET, Dhaka.

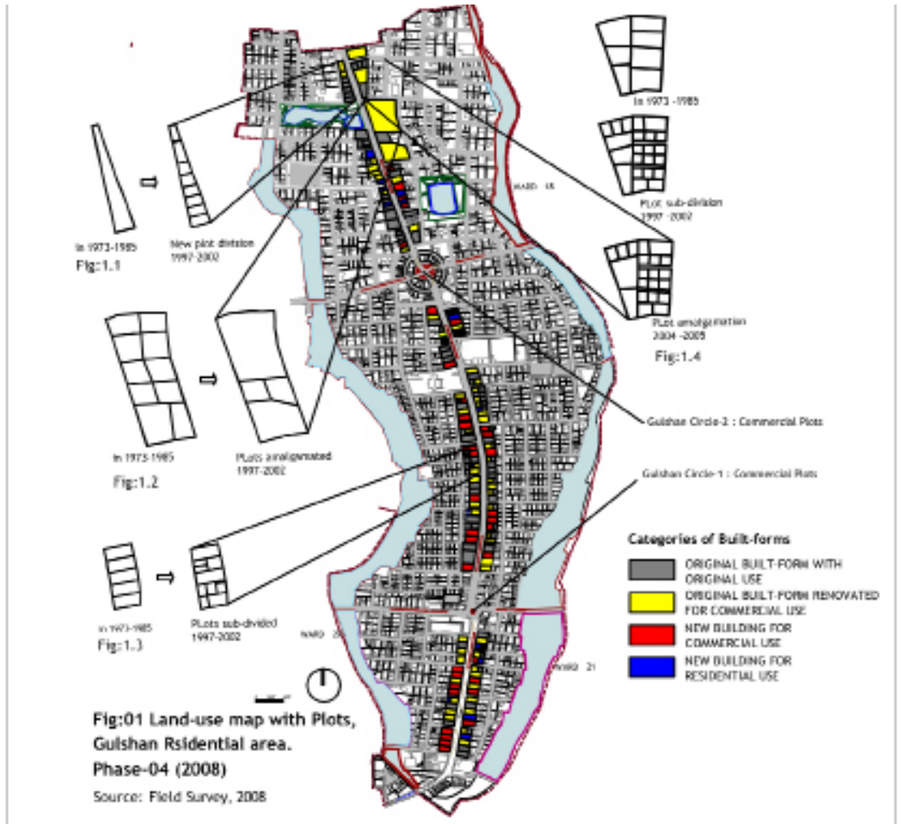
Pacione, M, 2001, *Urban Geography – A Global Perspective*, Routledge, London & New York.

Rajdhani Unnayan Kartipakkha (RAJUK), 2002, *Dhaka Metropolitan Development Plan (DMDP), Detail Area Plan for Begunbari Khal and its influenced area, Location 4*, Ministry of Housing and Public Works, GoB.

Zereen, Nuzhat., 2009, *A Study on the Morphological Transformation and the Emerged Built-forms along Gulshan Avenue*, Dhaka; Unpublished M. Arch. Thesis; Department of Architecture; BUET, Dhaka.

Notes

[1] Axial analysis is carried out with Space Syntax methodology following the theory developed by Hillier and Hanson (1984) at Bartlett in University College London, UK.
[2] One Katha is equivalent to 720 sq,ft.
[3] BTL refers to the percentage of land area covered by building floor area.
[4] Mean height of building refers to the value obtained by dividing the total volume of all buildings of case studies by the total built-area per floor.
[5] Mean volume of buildings is derived by dividing the total volume of buildings by the number of buildings.
[6] Floor-plates refer to a two-dimensional representation of buildings with their maximum area per floor.



Nicola Panzini
Politecnico di Bari, Italy

Munich, urban development: model and form of the modern city

"The greatest confusion was nevertheless created by the debate about the way of considering beauty as something real, immanent to things, or rather only relative to whom observes and knows how to recognize it, hence something of conventional, indeed, individual. Meanwhile, I dedicated myself to osteology, forasmuch as it's into the skeleton that it's safely conserved forevermore the definite character of every form."[1]

The research theme area is the evolution of the urban form and the following city construction.
The continuity of plans and architectural works makes reference to the case study of Munich.
The complexity of its culture and its singular development model provide a broad planning experience rich in architectural and urban design.

The Munich affair moves the usual approach to the urban analysis from a method based on the study of handcrafts' representational and linguistic aspects to a practice adopting a more complex group of criteria, such as city transformations, spaces and architectural works. Road, building character, relations with nature and landscape are the terms by which at various times the city will consolidate its forms. Architects who carried out its growth, in the successive stratifications preserved the value of this continuity.

In 1806, Munich became the capital city of Baviera. The urban design that would have shaped the new city profile was drawn up in 1810-12 by Friedrich von Sckell and Karl von Fischer, then completed and brought up to date by Leo von Klenze. The plan was to renovate the old parts of the city and to create new urban areas for residential use.

Their project did not weaken the compactness of the ancient core but the walls demolition, in place of which a large green belt was placed. These walls acted as passage way to the next nineteenth-century network and established the limits and the profile of the medieval tissue. In addition to the creation of this green belt, consisting of a boulevard with six lines of trees, the city development design was to enlarge the North-west area, where the medieval entering doors - Schwabingertor, Karsltor and Sendlingertor - were placed.
Von Sckell's and von Fischer's plan based on the division of the entire space into quadrangular checkerboard lots - principally for housing - with a variable length of 223 to 198 meters and with a 29 meters wide road section. The entire orthogonal plan followed the same direction as the Curdus and Decumanus upon which the medieval core was set up. The only radial road of this morphological regular system was the Max-Joseph-Strasse leading to the first urban space designed outward the walls: Karolinenplatz. (image 1)

In 1816 Leo von Klenze went ahead with the challenging program of Ludwig I of Bavaria who wished to transform Munich into a European capital city, but he found himself facing a city structurally contained into its medieval matrix: in fact, in some points some shreds of fortifications, bastions and a moat still survived. There were several buildings on the soil outside the walls; over time, obsolete buildings were leant to the Residenz and to the adjoined Theatinerkirche. In front of this scenery, the only way to summarize in one urban design all the answers to these various problems was to adopt Baumeister's attitude. In only four years Klenze realized, planned and got the permission for all those works constituting the main frame of Ludwig's city.
Supporting the urbanization values of his predecessors, he distributed the enlargements by planning a big North-southbound axis opposed to von Fischer's East-westbound checkerboard lots. After having read the pre-existing urban elements, Odeonplatz was decided to be the point of connection between Ludwigstrasse (North-southbound) and Briennenerstrasse (East-westbound) connecting Karolinenplatz to Königsplatz. Along these main directrices, Klenze resorted to close-knit settlements made of blocks with adjoining fronts placed in compliance with a spatial sequence similar to that of the urban Renaissance palaces. Karolinenplatz, instead, was conformed to the isolated pavilion style, supporting von Fischer's idea of circular square as focusing space where several residences with private gardens and in radial order overlooked.
The urban junction of Odeonsplatz shows an architecture that preserves this collecting value as symbol be construed as mark of the strengthened city; the Residenz, that was the official seat of Wittelsbach's monarchical power, is the threshold for the passage to the new urban shape. So, linchpin of this new system are the monumental architecture and a great green square, in other words, the articulation of a urban island with several inner courtyards and a rigorous wall created by the Hofgarten. Leo von Klenze's work about the new urban form in Munich preserves its strength and clarity through the urban sign continuity and by the construction of the collective space character.

It's a city wherein one could easily recognize into the architectural forms its evolutionary genesis. He gave the road the most important role and then gradually built around it the city. The spine was represented by two monumental axes; those, in turn, where slackening, closing or concentrating urban junctions - big public square such as Karolinenplatz and Königsplatz were representative elements of the collective life or rather symbols of the monarchical power (Obelisk, Propylaeon, Glyptothek, etc.). Roads branched off from those arteries and urban spaces followed a gradual order intended on confirming the global outline. Buildings facades stood for urban wall and drew the road section, acquiring a character directly proportional to the value of the route depending on if it was a primary directrice or a buildable route. It's for this reason that also to the civilian construction it was given a strong urban character and become integral material of the city decorum.

In his ten-year work, Klenze didn't restrict himself to look after the project in high-scale, but designed it and followed its realization till the very last detail. He was himself to decide the height and the distance among buildings, their roofs pitch, their facades language, the color of their plasters, till every single constructive detail. Finally, he contributed and took a stab at the realization of the many buildings and so of his own concept of urban space: he was entrusted to realize the portal of the residential garden (Hofgartentor), the Bazar-building as monumental enclosure for the garden (Bazargebäude), the Leuchtenbergpalais, the Odeonpalais, the houses from n° 1 to 7 in Ludwigstrasse, the buildings in Galeriestrasse and Schönfeldstrasse, the Maxpalais, the Kriegsministerium, the central construction of the Residenz, the Moypalais next to the Theatinerkirche and all the constructions overlooking Wittelsbacherplatz.

The effort to achieve unitariness into the urban space, pursuing a continuity of roads and urban walls, is supported by Friedrich von Gärtner, successor of Leo von Klenze, who from 1827 to 1844 finalized the northern part of Ludwigstrasse.
The thought about the urban space they share was the result of a sense of belonging to the same world culture, that of the Technische Hochschule in Munich, and to their personal stories too: Friedrich von Gärtner studied architecture in Munich from 1808 to 1811 mentored under the tutelage of Karl von Fischer, author of the first city enlargement project in 1810, and then apprenticed by Friedrich Weinbrenner in Karlsruhe in 1812. Von Gartner's education and works fostered Gottfried Semper's education. In 1864 he drew up two arrangement proposals for Munich about Prinzregentenstrasse as perspective glass toward the Festspielhaus. (image 2)

In 1891 a competition for enlarging Munich was published. The well-known panel Members – R. Baumeister, J. Stübben, C. Sitte, and P. Wallot – didn't succeed to identify the most suitable project to satisfy all the announcement standards and to converge all disparate members' opinions into one.
In the same year, the new city Oberbaurat, W. Rettig, proposed to establish a section for the urban enlargement and it was chosen Theodor Fischer to lead it since 1893. Fischer's activity in the Stadtweiterungsbüro took root during eight years of intense work and saw its most complete outcome in the Staffelbauplan formulation, the progressive construction project which, once approved, entered into force on 1904.
"In a passage of his book about architecture, L.B. Alberti wrote: the door is the way-out and the way-in of the city. […] The Italian Renaissance started with the purpose of pursuing the uniformity. All the more, it strikes the fact that Leon Battista Alberti consciously contested this trend, demanding that backroads turned here and there like rivers, *molli flexu sinuosae*, in other words that they turned in gentle bends."[2]
With these words Fischer clarifies his idea of the city and the elements he used to develop those new forms. The direct reference to Alberti provides us with the two basic points of his research permeating the Munich plan: the concept of limit, both as logical form finished in itself and transition space, and the importance of the road as skeleton and basis of the urban organism.
On the one hand thresholds, strain limits between inside and outside, the doors of the medieval city are a landing place; this conception fits to the big infrastructure nodes of the nineteenth-century cities, such as railroad stations and general market frames. In the Munich development project, Fischer seems to consider all the small urban cores crowning the city as the new threshold within which the city has chances to develop. Those urban nodes will be the doors of the modern city, the physical points of reference for its growth and the points of connection among all settlements throughout the region.

On the other hand, the work on the road network urges on Fischer to deeply think about the meaning of the urban island, about that part which strengthens and characterizes the frame of all paths and that acts as matrix creating the city. The plan for Munich was not, then, a town planning which divided the city into building areas but it was the working-out of a complex system that considered the city an horizontal composition made of different layers of construction (Staffel) indissolubly and hierarchically bound to the road network, to the type of construction, to the aggregation and jamming capacity of the urban island and to all its perimeter walls.
The plan is, finally, the explanation of a method which faces also the relation with the land structure, with the urban drift at the beginning of the century, with the pre-existing city and also with the nature. (image 3)

In the Staffelbauplan, T. Fischer uses nine levels of construction, to which then another one will be added; making reference to the block type and to the housing settlement, he describes three categories including those levels:
- the first one concerns the block building and includes the *geschlossene Bauweise*, a closed building system set up on levels 1-2-3-4-5, and the *offene Bauweise*, a opened building system set up on levels 6-7-8-9-10.
- the second one concerns the type of edifice and its aggregation and includes the *Vordergebäude*, that is the main edifice (facing the road) with multiple floors, covering profile and maximum permitted height, and the *Ruckgebäude*, that is the rear edifice (inside the road curtain or the boundary lot) with multiple floors, covering profile and maximum permitted height. In the *geschlossene Bauweise*, distances among private property boundaries haven't been established at all in order to grant a continuity for the houses overlooking the road; in the *offene Bauweise* instead, in order to confirm the scratchy and broken feature of the wall curtain, they have been established all the possible distances from the private property boundaries as well as from the road areas.
- the third concerns the building density and the risks of silting up and includes the *Hofraum*, that is the space of the open court ruled by relations proportional to the entire building lot surface.
Compositional principles confirmed in the plan structuring, recall the concept of a polycentric city that develops in an organic way and whose horizontal profile tends to enlarge and meet with nature, as well as to lose density and unity in favor of a greater interplay between them and of a greater ordinariety of the settlement.

New directrices stem from the old paths and radiate out throughout all the land, becoming the lead skeleton of the urban expansion. The character of the historic axes - roads constructing - is confirmed by the plan, constructed by the application of the level 1 and by the usage of the closed block with a maximum height of 22 meters for its facets. The morphological increase of them within the new quarters of the city (Neuhausen, Schwabing, Bogenhausen, Haidhausen, Berg am Laim, Ramersdorf, Giesing, Sendling, Laim) confirms their prominent role in the road network and their gradual streamline with regard to the urban centre: the application of levels 2 and 6 with a maximum height respectively of 18 and 22 meters, creates a various but uniform urban scene.
From the principal directrices built up using levels 1-2 and 6 it's possible to switch to those secondary directrices which define the closed forms of the urban network. Fischer will work with levels 3 and 4, that is the closed block with a frontage scaffold respectively 18 and 15 meters high. So, the urban outline tends to lighten but highlights the dialectical relationship among the vertical elements of the monuments and the compactness of houses: in this way, the twofold relationship with the permanency of the historical city and with the vast landscape becomes clearer, newly founding the viewing relationships between the urban horizons and the nature.

With levels 5 and 6, he goes on to fill and gradually form other blocks: level 5 provides for closed blocks and a maximum permitted height of 12 meters for their facets and constitutes the city fringes; level 6 provides for open blocks and a maximum height of 20 meters for their frontages and strengthens the lots placed throughout the road network and enhances the accessibility character of the buildings near rivers (Isar river) and historic green areas (Theresienwiese, Englischer Garten). The same modelling and defining role of the city outline, of putting all in relation, green areas and rivers included (besides cemeteries and woods), is assigned to levels 7-8-9, providing for open blocks and a fronting maximum height respectively of 18, 15 and 12 meters.

An illuminating example of urban completion according with the Staffelbauplan is the construction by Klenze of the two axes crisscrossing Ludwigstrasse and Briennestrasse. The first axis, pertaining to the level 1, confirms the continuity of the building backdrop and the representative and monumental nature of its artery, growing out of the Residenz into the ancient centre and branching off toward outside, becoming the framing element of the quarter of Schwabing. Works during 30's showed the effectiveness of the plan: the Ministry for Agriculture by F. Gablonsky (1937-39) and the modern Bundesbank by H. Wolff and C. Sattler (1938-41) are big public edifices established in blocks with closed frontages and inner courtyards; the University of Ludwig-Maximilian by O.E. Bieber (1936-39) closes Ludwigstrasse and confirms, by its profile and compact front continuity, the strength of this urban axis.

In Briennerstrasse, instead, Fischer makes explicit a crucial element about the permanency and the historical stratification: the different nature of this axis whose fronts are constituted by irregular facades of isolated but naturally dialectically related blocks. The usage of the level 6 justifies its peculiarity, that one could describe as a tensional sequence of objects (such as in Königsplatz), whose conformation in the open block consolidates its identity and detectability character during morphological transformations. Also in this case, the following application of level 2 makes the Briennerstrasse a fundamental rib of the new Neuhausen quarter and creates a direct and constant mean of spatial communication between the ancient city and the landscape and the tame nature of the castle of Nymphenburg. The unitary of this artery is confirmed by the application of Staffel's means on the successive architectures: the actual seat of the Austrian Embassy by R. Fick (1934-36) and the Bayerische Landesbausparkasse by J. Wiedemann (1955-56) respectively are a piece of curtain and the head of a great block which don't correspond to the big public edifice idea, but it's instead an open block whose edges are accessible and continuously crossable. It is the confirmation of a common attitude borrowed from the always changing space, but ascribable to some specific parts of the city. A space based on the expression of the exteriority of architecture, articulation of the urban facade. (image 4)

One could describe the Staffelbauplan by T. Fischer starting from three paradigmatic categories: road, house and nature. All reciprocally bound, these elements assert his intense and detailed work about the form as direct result of the *Stadtebauer*, the builder of the city to whom "every formal creation should lie in the economic, technical and landscape environment."[3]
The strict coherence with the principles of necessity and the comprehension of the urban forms and of their spatial meaning, allow the success of Semper's practical aesthetics, the heart of the following Staffelbauplan building procedure.

Aims of the study about Munich are the validation the German city features, whose reference models are the relations and spaces in the medieval city, and the immanent reality: permanent elements are not only those architectures intended as buildings but also all the signs throughout the territory, that is the soil invariable elements. By this, I mean the land parceling out of soils, the presence of old roads layout, the roughness of reliefs, the walls delimiting the country lots. I mean also, the importance and the characteristics of the main roads creating the medieval center of Munich which, in the second surrounding walls, are conserved and increased in number. These last will constitute the monumental axes in von Klenze and von Gärtner's design. The form of the city in the specific time becomes absorbed and renewed in the new city; to the deletion it has been preferred the permanence, to the rigid forms the concept of mediating problems, preserving the ancient traces as memory.

About the Munich by T. Fischer, one may think the same as about Alberti who, ''unlike some utopists, doesn't restrict himself to establish a geometric obliged structure: contrarily, his realistic feeling brought him to take into account the countless environmental parameters influencing the urban shape and to turn his attention not only to the new city, but also to the reform of the actual city; an interest not only for the chances offered by the perspective view in order to give a geometrical shape to the urban scene, but also for the values of the medieval city, for its gradual and narrative reading achieved through some not-straight channels."[4]

Notes

[1] Goethe J.W., *La metamorfosi delle piante*, Guanda Editore, Parma, 2008, p. 47

[2] Fischer T., Städtebau, in Kerkhoff U., *Eine Abkehr vom Historismus oder ein Weg zur Moderne. Theodor Fischer*, Karl Krämer, Stuttgart, 1987, p. 310

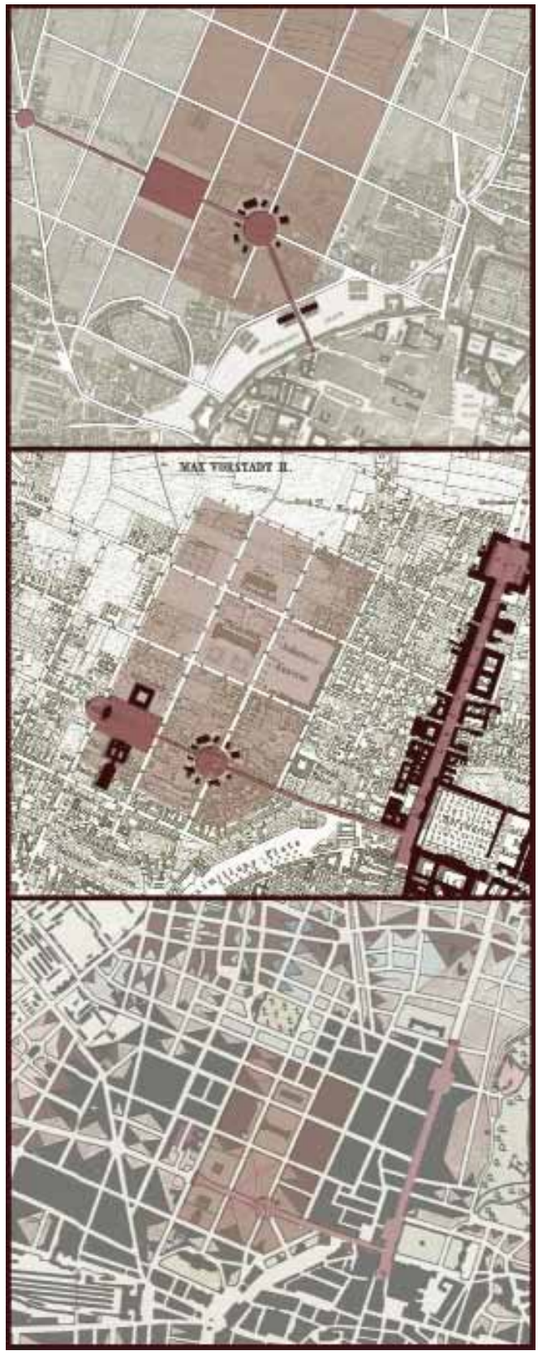
[3] Nerdinger W., *Theodor Fischer. Architetto e urbanista 1862-1938*, Electa, Milano, 1990, p. 28

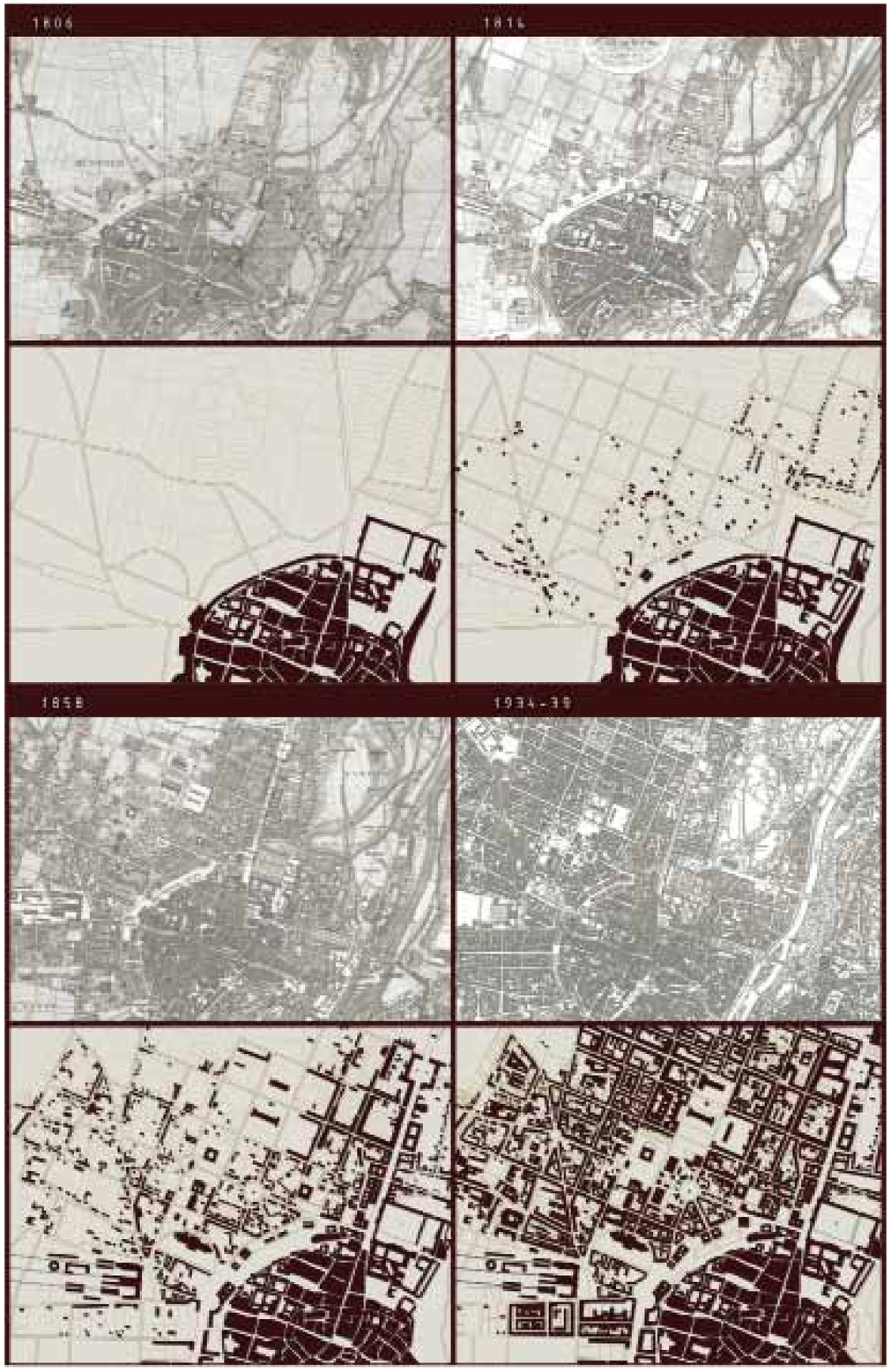
[4] Portoghesi P., *Introduction, in Alberti L.B., De Re Aedificatoria*, Edizioni Il Polifilo, Milano, 1966, p. XX

Legenda

Image 1: Urban development of Munich: major expansion plans
Image 2: Construction of an urban street: model of Brienner-strasse and Ludwigstrasse

Images edited by:
Faculty of Architecture of Bari. Graduate Program in Architecture, Final Workshop a.a. 2008-2009
Professor: V. Ardito, L. Ficarelli, G. Rossi, G. Consoli
Student: A.P. Di Maggio, C. Florio, A. Gatti, V. Ruggiero, N. Panzini, D. Piccininni





Philip D. Plowright & Anirban Adhya
Lawrence Technological University, Michigan, USA

Setting Priorities: Sustainability, Environmental Health, and Embedded Value Judgments for the Urban Design Process

Introduction

Debates of sustainable urbanism has framed recent formation of ideas and practice in urban design. Though urban design, as a concept, has historically been embedded in development of cities, it is relatively new as a discrete contemporary theoretical and professional discipline. Similar concerns in allied disciplines, and search of an appropriate framework for this nascent urban design discourse, has resulted in a definition of urban design as an ambiguous amalgamation of architecture, landscape architecture, urban planning, and civil engineering (Inam, 2002). Urban design, in general, lacks a theoretical framework of its own (Sternberg, 2000).

In the prevalent paradigm of urban design pedagogy, urban designers are primarily trained as architects, planners or engineers. As such, there is little shared understanding of values, priorities or even discourses within urban design. For example, disciplinary language, values and tools are embedded as latent ideological positions in both a definition of a design-based practice and the generation of proposals. Architects see design as formal orientation and interventions in space. Planners conceive design as regulatory framework and implementation of policies reflecting social and economic values. Engineers understand design as efficiency in production. This eclectic approach of urban design creates a partitioned education model with conflicts, contradictions, and radically different priorities depending on who defines the nature of urban design.

We have previously argued for a clear definition of urban design (Adhya et al, 2010) and stressed the nomenclature *sustainable urbanism* as important terminology. Our position was based on reducing concerns of the city and urban development to “a system of organized complexity” (Jacobs, 1961). This definition approaches urbanism as an ecological process. The ecological model, inspired by classical works such as *Fundamentals of Ecology* (Odums,1953) and *Design with Nature* (McHarg, 1992), derives the notion of sustainable development as a process of relationships among the natural systems (such as soil, climate, hydrology), human systems (social ethics and values), and the economic systems (allocation, distribution, and management of resources). The systems approach introduced by an ecological framework has a possible lack of intersect with current models of urban development. The ability to propose an inclusive model is tempered by involved disciplines that might have shared general understanding but have little in terms of shared processes, values or tools. When several individual disciplinary value systems are involved, under the mantle of sustainable urbanism, *how do we set up priorities of judgment for a sustainable urbanism as an ecological response which align various value systems with definitions of meaningful success?*

This paper addresses this question by using latent semantic analysis to examine documentation of the major disciplines that shapes our urban landscape. The questions become: 1) are the priorities of a truly sustainable, ecological position found within current disciplinary language? and 2) is there some way to connect to dialogue between these disciplines to focus on a set of shared priorities which intersect with internal biases of these disciplines?

Part I [EXAMINING PRIORITIES]

Sustainable urbanism has recently been defined as “walkable and transit-served urbanism integrated with high performance buildings and high-performance infrastructure” (Farr, 2007). This statement reveals a bias towards urban morphology without consideration for supporting, non-formal values. Compactness (density) and biophilia (human access to nature) are considered as the core values of sustainable urbanism. The current popular definition of sustainable urbanism is imagined as a grand unification of architecture, city planning, and environmental design for a better way of life. This is problematic as it situates the domain of sustainable urbanism in the context of contradictory and conflicting design bias of architecture, urban planning, landscape architecture, and civil engineering. This also underscores a lack of clear definition and understanding of sustainability and sustainable urbanism (Newman, 2005).

The underlying methodology of this project is to approach sustainable urban design by utilizing categories that transcend familiar disciplinary boundaries of form, open space, policy, and implementation. As developed in a previous paper (Adhya et al, 2010), two content categories are introduced as a point of challenge to mainstream conceptions of sustainability.

First, the relationship between human development and conceptual continuity of the natural environment is considered a core issue, and at the heart of the definition of ecology. The center of any decision-making of sustainable urbanism needs to stress the full integration of human existence and the environment (*human-nature integration*). The need to understand our environment as a finite closed ecosystem is paramount to this integration, as well as defining human involvement as participation in, rather than controlling of, that environment. The concept of place is critical to this understanding. Within the formal framework of political processes, social ideologies and morphological typologies, quality of place exists as a perspective of everyday actions as effects and responses, rather than a static category. Human-nature integration addresses the ecological concern of *balance* and *fitness*. Balance refers to harmony and balancing the “natural” environment with “human” development in a place. Balance implies equilibrium, harmony, and systems-based decision making. In open, complex, and dynamic systems like the city, there are multiple contradictory interests, the ability to see the whole rather than the parts is a critical factor. Fitness has a long tradition in biology and conservation. Fitness implies an evolutionary process marked by the mutual interaction among species and between species and environment (Spencer, 1864). It involves adaptation over time – a fit between organism and habitat.

The second is setting priorities around the concept of *human well-being* as a multifaceted approach to health and welfare. Well-being is defined by physical thriving, social justice, and social hope encompassing health of context in all its richness, including health of individual and health of community (Adhya et al, 2010). There are powerful synergies between sustainable development, social hope, social justice and equity at the community level as well as globally. There are also strong connections between these factors and thriving physically. Clean, green, and attractive neighborhoods fostering safe and strong communities, and improving the quality of life, should be accessible to everyone irrespective of race, class, creed, and color. Questions such as those of energy, transport, climate change, and waste cannot ignore the issues of social equity and justice. This involves ecological resilience, capacity, fitness, and diversity (Neuman, 2005). *Capacity* refers to carrying capacity of a place to support populations of living beings. It is perhaps the oldest notion of sustainability. *Resilience borrows* from notions of health such as immunity and recovery. Resilience, whether for individuals or communities, is based on accommodation between the organism/community and other external agencies. Diversity is an indicator of health, whether for an ecosystem, urban community, or organization (Wilson, 1988; Schulze & Mooney, 1993). Diversity refers both to the variety and heterogeneity of members in a community and the positive position of members in relation to one another. It implies interaction, adaptation, tolerance, and respect insofar as for a diverse group of beings to occupy the same space simultaneously, those beings must learn to coexist. At least, diversity recognizes difference and establishes co-presence and awareness of others.

Using this set of categories as a challenge framework – derived from fundamental elements of sustainability – we can examine our current discussions, policies and proposals for value judgments in sustainable urbanism. Do disciplinary boundaries need to be redefined or are there strong elements present within the involved disciplines to allow an ecologically-based sustainable urbanism to be developed from existing conditions?

Part II [EXAMINING CONTENT]

Methodology

The developed challenge framework is applied to four disciplinary contents operating within sustainable urbanism: urban policy (infrastructure capacity), urban regulations (zoning capacity), urban form-making (built volume capacity), and regional development (landscape capacity).

A mixed methods approach to the research is used, employing a semantic engine (Tropes 8.1.1/Semantic Knowledge, 2011) for quantitative and early qualitative data extraction. A second, deeper qualitative analysis is done manually after the initial clustering was completed. In this early stage of a larger research project, the methodology of the study involves examining a single representative case-study from each of the four involved disciplines within discussions of sustainable urbanism. These representative examples are analyzed for how they aligned with priorities of human-nature integration and human well-being, as proposed in the section above. A custom scenario for semantic analysis is developed, which included major content groups (*human-nature integration and human well-being*), a check group (*control*), and two framing groups (*built environment and natural systems*). Each of the content groups contains semantic equivalent class indicators to identify correlations between language use in the texts and terminology considered important to the priorities of sustainability. Human-Nature Integration contained subcategories of balance and fitness. Balance contained references to *equality*, *equilibrium*, and *integration*, while fitness addressed *adaptation, appropriateness, customary patterns, suitability* and *thriving* (Schumacher, 1973; McRobie, 1981; Lynch, 1987). The Well-being category contained the subcategories of *carrying capacity* including consumption, externality, footprint, limitation, local resources, natural capital, natural income, per capita consumption and categories for maximums (Rees, 1996); *diversity* involves desegregation, ethnicity, gender, liberty and social class (Wilson, 1988; Schulze & Mooney, 1993); resilience consists of adjustment, buffers, coping, liveliness, recoverableness, and responsiveness (Folke et al, 2002); and *human health* was developed based on categories of basic needs, belonging, safety and self-esteem (Hagerty, 1999; Maslow, 1970). The control and framing groups contained standard conceptual indicators from Tropes V8 English semantic network.

Representative samples of each of the four capacities of current sustainable urbanism include London 2012 Olympic Park (infrastructure), Portland Title 33 (zoning), Masdar City Development (built volume), and Fresh Kills Park (landscape). Samples were built from either a complete document (Portland) or from the assembly of published text from authoritative bodies and professionals involved. The Olympic Park sample contained 39,792 words with 3,131 passages identified as significant, Portland Title 33 contained 449,472 words with 38,292 passages, Masdar City contained 22,265 words with 2,384 passages, and Fresh Kills contained 31,116 words with 2,395 passages. Each sample includes multiple dimensions, identified from the constructed scenario, as extracted from the source text in the following volumes: 241 dimensions (Olympic Park), 365 dimensions (Portland), 220 dimensions (Masdar), and 219 dimensions (Fresh Kills). The volume and dimensionality of the sample is considered acceptable for semantic analysis. An optimum for analysis consists of 25,000 words in 300 dimensions. For dimensionality, 200-2000 is considered a healthy range to return non-faulty results (Landauer et al,1998).

Analysis and Observations

On a quantitative level, there are strong similarities in how each of the four capacity frameworks (massing, landscape, zoning, and infrastructure) approach the language of sustainable urban design. There are also some critical gaps in these different priorities. While we had postulated a separation of concerns between architecture, landscape architecture, engineering, and urban planning, introduction of sustainability seems to have brought some reasonable alignment among these disciplines on the surface. Diagram 1 illustrates the percentage that each dimension occupies in the total narrative. Even though there were different source materials, different approaches, and different length of text, human well-being occupied approximately 25% of the semantically relevant indicators in all the cases, whereas terms relating to human-nature integration were 3% in all cases, references to *natural systems* around 11% (this spiked for the landscape sample to 23%), and references to the built environment 50-60% in all cases. (Figure 1)

Issues surrounding human health are well represented within the major content group of *human well-being*. It dominates the category consuming between 80% to 95% of the *well-being* category in all sample text. This, in itself, might be an issue as it suppresses other critical factors of well-being which are tied to ecosystem health rather than human health. The basic subcategory sets priorities as clean air, clean water and waste removal, with accommodation for food production. Integrated food production, including a linkage to organic waste, is found in the built volume capacity (Masdar) while the other capacities accommodate agriculture somehow. *Belonging* stresses human social interaction, social dynamics, physical and visual connections, localness and neighborhood. The concept of social ecology as being important to our sustained quality of life is well accepted and embedded in all the source material. Equivalents for *connect* and *place* are populous. *Safety* is generally found in concepts for housing, homes and sheltering the human body. Less explicit are embedded concepts of security as a design strategy. The final subcategory, *self-esteem*, includes a strong public engagement narrative, which includes a sense of ownership, access and occupation of the landscape by the public. The quality and access to strong public space is identified as a critical health factor for humans. What is not so well represented in *human well-being* are direct references to *carrying capacity*, *diversity* and *resilience*. Diversity does, on a human level, starts to become overlaid with issues of self-esteem and belonging. Social class is recognized as part of diversity, in terms of introducing a strategy which will allow everyone, regardless of age, gender, mobility, ethnicity or circumstances to have access to the urban space.

One interesting observation comes from the check group of *control*. In three out of the four capacity samples, concepts for control are tempered with a context with includes stewardship, evolutionary concepts, management and guidance rather than domination, authority, restriction and supervision. The one exception is the zoning capacity. Zoning is dominated by the concept of ‘to divide’, seconded by the concept ‘to limit’ .
The division of space is of significant value in terms of policy application and the introduction of regulations.

Two framing groups, *built environment* and *natural systems*, began to reveal some interesting information. They checked for attitudes towards our environment either in terms of human constructs or traditional terminology for ‘nature’. Each capacity and discipline contains its own cognitive model which limits or supports certain priories in decision-making. A cognitive model produces a framing semantic, an overall structure to how the parts are arranged within a larger system, and how that system then focuses on the parts (Fillmore, 1996/1982; Lakoff, 1979). Across all capacities, the frame semantic placed the built environment as a clear priority. The place of operation for urban design is in the formulation of our concept of settlement, and focused towards ‘large settlement’. It is not a surprise, but does raise the question whether sustainable urbanism should extend past concepts of human density and settlement development to address ‘habitat’ in a wider range of definition. This has started to occur in projects such as Olympic Park and Fresh Kills, where ‘habitat’ replaces ‘development’ as dominant terminology. Habitat contains concepts of biodiversity and ecology as core qualities of human habitation, and therefore, sustainable urbanism. This would begin to address issues with defining infrastructure, which currently is seen almost completely in terms of either energy or transportation, rather than integrated with natural systems (such as green infrastructure).

The framing groups allow a view into meta-narratives of how we organize, prioritize and make decisions within the various sustainable urbanism disciplines. Built volume, in terms of sustainability, presents sensitivity to natural and indigenous patterns, but it also has a very strong vector of belief in technology and industrialization as a solution. This attitude can be traced far back in

the discipline of architecture as Mies van der Rohe (1924) wrote in *Industrielles Bauen* that "If we succeed in carrying out the process of industrialization, our social, economic, technological and even artistic problems will be easy to solve." Landscape seems to support the greatest position of synthesis and integration of the natural environment but it does it at the expense of human infrastructure and even human habitation (humans are guests in the landscape, not residents). Equilibrium is approached not through change and adaptation but the concept of stasis. Zoning leans towards prescriptive action and is fundamentally based on regulatory framework using the concept of division of space and the separation of functions. Accordingly, it doesn't handle systems-based decisions well, nor does it seem to have the structure to produce synthesized landscapes. Efficiency has strong lessons for biodiversity and integration but needs to evaluate the concept of value, as it is mainly in terms of human benefit.

Conclusion

There is a clear set of shared priorities beginning to form in how each of the four sustainable urbanism capacities present themselves. Many sustainable factors, as defined in the challenge framework, are clearly shared between disciplines. Human health is of importance at the core of many of the design and development intentions of sustainable urbanism proposals. All disciplines address this through several dimensions beyond just life safety, physical health, clean air, clean water and waste removal. The less tangible issues of self-esteem and belonging are also present. Considering belonging is at the core of place making, this is very encouraging. In addition, there is a trend developing which could address the inherent separation of man and nature. This is the understanding of the purpose of sustainable urbanism as "habitat construction" rather than "built environment development". In this, sustainable urbanism begins to address systems-based content and multi-occupant (including non-human) presence.

Larger concerns come from two directions. First is the lack of priorities, or even content, in some significant areas of well-being, balance and fitness. While human health is well covered, carry capacity, resilience nor diversity is not addressed in any substantial way. Each of these terms are complex and currently ill-defined in operative ways. Carrying capacity, resilience and concepts of "valuable resource" all need to be based on global ecological needs rather than human use, economic value or perceived human consumption. Though there is a local effect, these priorities should be defined in global terms first to avoid a framing issue. The second concern is from the early review of framing semantics which are intimately involved in design-making and prioritization of issues. The framing issue, one shared by all capacities, is the suppression of understanding human development as occurring inside a large closed ecosystem. Development is not infinitely expandable and each landscape has non-negotiable limitations that should be addressed.

Within the latent content of current sustainable urbanism projects, a persistent conceptualization of the human built environment is present completely separate from that of the natural systems. Natural systems are a minority in representation and almost consistently defined in terms of human benefit, treated as "urban furniture" (trees) or considered an accent piece. In particular, the concept of wilderness, as a core representation of Nature, is completely absent from any text in all of the capacities studied. While plants, animals and ecosystems are discussed in terms of human value, wilderness is a concept that is outside of the dialogue. It seems, currently, to have no place in human landscapes.

Finally, based on current latent priorities, integrated networks that address human and natural systems (green infrastructure) will have difficulty in implementation as long as the major mechanism of development, regulations and zoning, continue to be based on concepts of division and separation. The priorities involved in sustainable urbanism are identifiable and, mostly, are found within current dialogues. The larger issue seems to be one of frame semantics. Nevertheless, current shifts in many areas are positive, and are moving towards systems-based decision-making as well as a process-oriented design structure, requiring further careful study.

Bibliography

Adhya A., Plowright P., Stevens J., Defining Sustainable Urbanism: Towards a Responsive Urban Design, *in Proceedings of the Conference on Sustainability and the Built Environment*, King Saud University, Saudi Arabia, 2010: 17-38.

Farr D., Sustainable Urbanism: *Urban Design with Nature*, John Wiley, New York, 2008.

Fillmore C. J., "Frame Semantics." *Linguistics in the Morning Calm: Selected Papers from SICOL-1981*. Ed. Han'guk Ŏnŏ Hakhoe. 129 Vol. Seoul: Hanshin, 1996 (1982): 111-137.

Folke, C. et al. "Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations." *Ambio* 31.5, 2002: 437-40.

Hagerty, M. R. "Testing Maslow's Hierarchy of Needs : National Quality-of-Life Across Time." *Social Indicators Research* 46.3, 1999: 249-71.

Inam, A. "Meaningful Urban Design: Teleological/Catalytic/Relevant." *Journal of Urban Design* 7.1, 2002: 35-58.

Jacobs, J. *The Death and Life of Great American Cities*. New York: Random House, 1961.

Lakoff, *G. Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: University of Chicago Press, 1987.

Lynch, K. *Good City Form*. Cambridge, MA: The MIT Press, 1987.

Maslow, A. *Motivation and Personality*. New York: Harper and Row, 1970.
McHarg, I. L. *Design with Nature*. New York: John Wiley, 1992.

McRobie, G. *Small is Possible.* 1st ed. New York: Harper & Row, 1981.

Neuman, M. "The Compact City Fallacy." *Journal of Planning Education and Research* 25.1, 2005: 11-26.

Odums, E. P. *Fundamentals of Ecology*. Philadelphia, PA: Saunders, 1953.

Rees, W. E. "Revisiting Carrying Capacity: Area-Based Indicators of Sustainability Revisiting Carrying Capacity : Indicators of Sustainability." *Population and Environment* 17.3, 1996: 195-215.

Schulze, E.-D., and H. A. Mooney. *Biodiversity and Ecosystem Function*. Berlin, Germany: Springer Verlag, 1993.

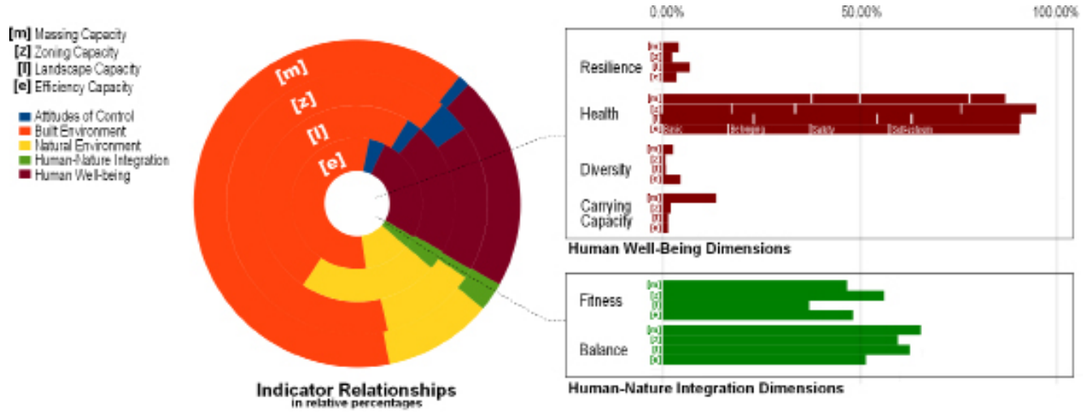
Schumacher, E. F. *Small is Beautiful: Economics as if People Mattered*. New York: Haper and Row, 1973.

Spencer, H. *The Principles of Biology. Vol. 1*, London, UK: Williams & Norgate, 1864.

Sternberg, E. "An Integrative Theory of Urban Design." *Journal of the American Planning Association 66.3*, 2000: 265-78.

Legenda

1 Semantic indicator relationships between major categories and primary subcategories



Marco Prusicki - Giovanni Cislaghi
Politecnico di Milano, Italy

Milano: a new dock on the site of the porta genova railway station

In his famous essay *Vie des formes*, Henri Focillon reminded the reader, talking about architecture, that "this art is practised in real space, the space where we walk and where we carry out our activities"[1].
The architectural project is nothing but the transformation of an existing concrete space, rather that the materialization of an abstract space.
Unlike geometry, which is the representation of an abstract design, architecture is the thought of a concrete space.
In order to deal with planning research it is necessary to start from reality rather than from abstract models. If the place of the project is not an abstract space but the concrete space of the city, the knowledge of its spatial rules becomes a necessary condition for the development of planning research.
However, it is not correct to identify architectural space with objects, with material reality. Paraphrasing Carlo Cattaneo, it may be said that *every civil country can be distinguished from a wild one because it is an immense storehouse of projects*.
The necessity of developing architectural thought in rapport with a concrete space it refers to, is accompanied by the need to consider architectural space starting from the way it was imagined, as a representation of one or more projects that have preceded it. If considered together, they form the backdrop for its possible future.

The project we are presenting[2] concerns the transformation of a Milanese district, the district of Porta Genova, that took shape during the second half of the nineteenth century, as an extension of the historic Porta Ticinese district, whose specific character was that of being a "city on water".
The opportunity for transformation arises from the planned decommissioning of the train station and related rail yard; it is an extraordinary and unrepeatable opportunity, that we believe should be taken, in the first place, to requalify and potentiate the role of the water system in the city of Milan, developed over two thousand years of history, by bringing to unity canals planned in different periods and for different uses, but always in the most significant moments of the construction of the city; a system thrown into crisis by the modern process of transformation, that considers the presence of water as an obstacle to its goals and that has pursued their gradual and constant elimination from the urban ground; this has caused not only the loss of a fundamental historic-cultural heritage for the city, but also a very critical condition of the water system, the proof of which is the present condition of the Darsena – historic dock of Milan and main element of identity of Ticinese district.

The first project we considered significant to refer to is the unrealized project for the deviation of the Naviglio Grande and for the construction of a large new dock on the site of the historic one, proposed by Giuseppe de Finetti in 1945[3]. In his project, developed as a critical contribution to the planning process for the reconstruction of the city, water is once again the essential element for the definition of the Ticinese area public spaces. De Finetti proposed the deviation of the last stretch of the Naviglio Grande, not only to adapt the capacity of the canal to the new navigation needs but also, and perhaps more, to "maintain the old Darsena in working order", assuring the water circulation, by then in critical condition owing to the deviation of the Olona river (1928-1930) and to the suppression of the Naviglio di Viarenna (1933).
The loss of their inflows, which makes most of the water in the basin stagnant and putrid, still remains today as the fundamental problem for any requalification proposal of the area. The risk of a new failure of the redefinition of the Ticinese public spaces is thus still linked to the lack of interventions that deal also with the redefinition of the entire Milan water system, in which the Darsena plays an essential role.
The decommissioning of the Porta Genova railway permits us to reconsider de Finetti's proposal today: that is to think again, first of all, of a deviation of the Naviglio Grande at the height of the via Valenza bridge, in order to bring its water, through the areas of the railway, towards the north side of the historic Darsena, at the point in which the Olona river flowed in.

In the large area of the rail yard, freed from the tracks, the Naviglio, deviated in order to give new life to the historic Darsena, can expand and become a New Darsena: a new great "water square" for Milan, an element of unity between parts of the city that developed without any connections, capable of unifiying the convergence of roads and canals, and of becoming an overlook for the surrounding urban fabric and for the existing activities.

Via Tortona is the second key project we take into consideration: along with the ancient church of San Cristoforo, located where the road meets the Naviglio, it may be considered as the "soul" of the Porta Genova district.
In fact, between the ancient road to Abbiategrasso and the route of the Naviglio, the historic maps show two roads that roughly follow the Roman centuriation and that may be interpreted as deformed versions of ancient roads. They are two modest rural routes that have played a role of great importance in the late ninenteenth century trasformation of the area, taking on the names of via Savona and of via Tortona. Towards the outskirts, the first (via Savona) ended after a short distance, near cascina Filippona – a farmstead, on a perpendicular route, while the second (via Tortona) continued but changed its direction by going towards Barona and the territory south of Milan. Towards the interior of the city, its layout was interrupted by the Bastioni (sixteenth century city walls), but already in the early middle ages the continuation of the two roads was obstructed by the presence of the Braida di Monte Volpe, an enclosed area planted with vineyards and fruit trees and surrounded by hedges, that occupied the area between the suburb of San Calogero and Via Arena.

Along the road to Barona, the presence along the Lombra river of an early church dedicated to San Cristoforo de Porta genuensi with a connected hospital, along with the dedication to the saint, the christian Hercules from Lycia, are elements that demonstrate its ancient origin, related perhaps to a preexisting pagan temple. Its existence, whose presence is documented since 1192[4], precedes the excavation of the Naviglio Grande. And it is probably on this occasion that the church was demolished and rebuilt along the Naviglio, where it still stands today.
The fact that on June 12, 1329 the emperor Louis the Bavarian passed the Naviglio with his army near the church of San Cristoforo on his way to Pavia, leaves fair chances that in the early middle ages a road leading from Porta Ticinese to Pavia, through Barona, existed. This route, as has been said earlier, was interrupted in its connection with the city by the enclave of the Braida di Monte Volpe.
The specific identity of the district between Via Tortona and the church of San Cristoforo, alongside the decommissioning of the rail yard, draw attention to the opportunity to extend the transformation area of the rail yard, also taking into consideration the areas between the railway and the Naviglio, west of the railway, as far as the church. This entire area may be considered as a single unit for urban intervention.

The wide curve of the tracks is the third project that we considered essential in the definition of the area.
As early as 1836 Carlo Cattaneo had proposed the creation of a railway line and of a "great mercantile emporium" close to the Darsena, site of the convergence of Naviglio Grande and Naviglio Pavese and of important territorial routes, so as to "almost [create] a sea port"[5].
Therefore, in 1860 the request of the management of the Vigevano-Milan railway company to build a new station close to the Castle was in contrast with the Ministry's decision to place it near the Darsena, "centre of water vessels and of many dwellings"[6].
In the first project for the Vigevano-Milan railway and freight yard (1863)[7], the terminal and the related square were oriented towards the road leading to Barona (via Tortona) and the ancient route, interrupted in the early middle ages, was linked up after many centuries with the city centre, through a new axis leading to Pusterla dei Fabbri and perpendicular to the city walls.
Between the railway and the Naviglio Grande a new basin was also planned, surrounded by warehouses and depots, with the clear goal of integrating the existing water network with the new railway system.
The proposal for the construction of a new basin connected with the train station was maintained also in the 1865 final project for a through station as an alternative to the terminus version[8]. The station and its large new square, built according to this project, abandoned the reference to the old Barona route and became the focus of a new system of three converging streets.
The wide curve of the tracks, carefully studied on the basis of the technical needs of the railway link, crystalized a few years later with the opening of via Valenza[9], became the essential element of identity and at the same time of separation between parts of the city that had very different destinies, both architectural and functional.
The proposed layout reinterprets the technical motive underlying the shape of the rail yard and relates it to the new canal system.
The new route of the deviated Naviglio, widened to form the New Darsena, has an even width along the entire lenght of the rail yard, so as to solve the continuity between the quay of Ripa di Porta Ticinese and via Valenza with a single and even curve.

The recent transformation of the industrial area , which grew on the basis of the first general extension plan for Milan, elaborated by Cesare Beruto in 1884[10], in the new "microdistrict of image and culture", by now well known throughout the world, is the fourth project that we have taken as a reference for the elaboration of our proposal.
The historic routes of via Savona and via Tortona, that until Beruto's extension plan had been the only reference for the development of the city, also oriented the choices of it: perpendicularly to the two roads, Beruto traced a new central axis that was meant to organize the district, anticipating today's via Bergognone. In this first version of the plan, the street, after crossing a large quadrangular square, imagined as the centre of the new district and lined with regular buildings, was supposed to become narrower and end against the railway.
According to the plan, it intersected, at the centre of the square, a new street parallel to via Tortona, that appears as a new road leading to Barona, by continuing beyond the railway and the new ring road. Also this wide avenue, forty metres wide and the only one that was supposed to continue beyond the ring road and the Naviglio Grande – a modest compensation for the razing of the city walls – followed, in this part of the city, the orientation of the Roman centuriation; beyond the circuit of the ring road and of the railway, the Olona river abandoned its existing bed to join up with the southern branch of the Lambro Meridionale river.
During the subsequent drafting of the final 1889 version of his plan, Beruto designed a dense street network which preserved the orientation of the old agricultural layout, forming a sequence of small-size blocks. Via Bergognone emerged among the planned roads as the main axis, along with the ring road: a tree-lined avenue starting in piazza Piemonte, created more to the north, along the road to Turin, to beyond the Naviglio Grande, which was supposed to be crossed with a bridge, in order to join another avenue placed on the south side of the city; this bridge was never built, in spite of it being included in all the subsequent city plans.
After the extension of the underground line to Porta Genova in 1983, the Solari-Tortona industrial district underwent a radical transformation, becoming in a few years the today internationally famous "microdistrict of image and culture"[11].
The most recent and relevant project for the area is *Città delle Culture*[12], designed by David Chipperfield by converting part of the old Ansaldo factory, a large complex with long, multi-storey facades along via Tortona and via Bergognone; this complex occupies the site of two blocks, where Beruto had planned his large square as meeting place for the inhabitants of the district. Thus the latter seems to have finally found a chance to be built after more than a century.
In our project a unitarian architectural complex gives form to the limit of the New Darsena, on the side of the Savona-Tortona district, giving architectural expression to its existing functional features. It takes over the role of northern embankment of the basin, and at the same time, at the back, has a portico that bounds a tree-lined twenty-metre wide avenue, that completes the district's road network.
As can be seen in the project's cross section, the structure contains urban walkways on various levels, also as a reference to the structure of the historic city and to some important projects belonging to Milanese architectural culture, by authors such as Filarete, Leonardo, Antolini, Cagnola and de Finetti. The porticoed avenue is connected through stairs to a raised walkway overlooking the water, also lined with trees. Spaces for exhibitions, commerce and public facilities open on to the two lower walkways, so as to fulfill the current demand for collective spaces usable during the night without creating conflicts with other functions.
The two higher stories form a body over the walkways, where studios, workshops, research centres, projection rooms, meeting rooms, spaces for fashion shows, etc., may find a specific placement, with the possibility of horizontal and vertical internal connections.
The buildings' architecture is characterized by the rapport between the continuous base and the body above, subdivided in sections that articulate the length of the complex, coherently with the structure of the district's blocks behind. At the points corresponding with the existing streets or walkways the base opens up on to the water, so as to permit direct access to the water through quays.
The two end blocks, towards the historic centre and at the end of the current rail yard, become essential nodal points of the complex.
Towards the historic centre, the existing station building is used for the port facilities and is directly linked with the underground station.
On the opposite side, at the end of the current rail yard, a square opens onto the water; it houses an auditorium, which is planned as a link with the Città delle Culture museum and with the new sports centre, which occupies the areas between the current rail yard and San Cristoforo, as a reinforcement of the existing facilities. The sports complex faces the square with the large building that contains the pools: this building revives an important Milanese tradition, interrupted today from the point of view of architectural research, but very much alive in numerous small commercial facilities.
The axis of via Bergognone leads to the New Darsena, confirming the failure of the proposals for a road crossing of the canal. A footbridge, however, permits a pedestrian and bike connection with the opposite bank, in order to connect the new complex and the ex-industrial area of via Tortona with the Argelati public park and with the residential area along the south side of the Naviglio Grande.

In this way, taking as reference the four projects that we consider essential for the identity of the context, our project for the transformation of the railway areas finds its reasons.

Notes

[1] Focillon H., *Vie des formes*, followed by Eloge de la main, Presses Universitaires de France, Paris, 1943 (seventh edition, 1981), p. 23.

[2] The project was elaborated in 2009 at Facoltà di Architettura Civile of Politecnico di Milano for the workshop "Milano, scali ferroviari e trasformazioni urbane" by Giovanni Cislaghi and Marco Prusicki, with A. Schiavo, A. Lorenzi, G. Mazzeo, G. Barbero (hydraulics), G. Galloni (structural planning), and with A. Coelho Sanches Corato, G. Menini, S. Perego with M. Marjanovic, N. Shchedrova, M. V.Verzi, S. Vimal (PhD candidates in Architectural Composition) and with the help of students F. Argentini, E. Bigioni, G. Casati, A. Colombo, A. Desole, C. Gallizioli, M. Giordanengo, M. Micci, L. Pongolini, J.M. Prieto, V. Sardo, R. Turohan.

[3] de Finetti G., *I Navigli Lombardi*, in "Illustrazione Italiana", September 2, 1945.

[4] Giulini G., *Memorie spettanti alla storia, al governo e alla descrizione della città e campagne di Milano né secoli bassi*, Milan, 1760, vol. IV, p. 68; vol. V, p. 31.

[5] Anceschi G., Armani G. (edited by), Carlo Cattaneo, *Scritti sulla Lombardia*, vol. II, Ceschina, Milan, 1971, p. 58.

[6] *Atti Amministrativi del comune di Milano* (Milan Municipal Proceedings), 1862, session n.1, tratt. I, pp.1-14.

[7] Garavaglia G., *Progetto per la nuova via e la nuova Porta da aprirsi fra la Ticinese e la Vercellina coordinato colle strade d'accesso alla Stazione da erigersi a Porta Ticinese per la Ferrovia Vigevano-Milano*, April 30, 1863 (Milan, Archivio Storico Civico, Fondo Strade).

[8] Garavaglia G., *Planimetria del Circondario esterno e interno di Porta Ticinese col progetto di stazione della ferrovia Vigevano-Milano e delle linee stradali di accesso*, August 26, 1865 (Milan, Archivio Storico Civico, Fondo Strade).

[9] The project was made by engineers Ferrante Guelfi and Angelo Fasana.

[10] Boriani M., Rossari A. (edited by), *La Milano del Piano Beruto (1884-1889)*, vol. II, Milan, 1992, p. 11.

[11] *Conoscere Milano. I luoghi della trasformazione. Via Savona-Via Tortona e dintorni*, Milano Urban Center-AIM, Milan, 2003.

[12] Barazzetta G. (edited by), *Milano 2001*, supplement to "Casabella", n. 690, June 2001, pp. 68-73.

Giovanni Rabino - Valerio Cutini
Politecnico di Milano, Italy

Revealing the urban plan

The configurational analysis as a support for the evaluation of urban plans and projects

Introduction

These last few decades have brought, on the wings of an extraordinary increase, improvement and capillary diffusion of information and communication technologies, a widespread development of territorial modelling tools, so that it can't be denied that most of the goals of the golden age of 60's and 70's are now to be considered as definitely achieved. What once was remotely pointed out as a far to come and ideal horizon can be regarded as the present realty: a generally exhaustive provision of territorial data and information is actually existing and cheaply available, the computing power for their processing is largely sufficient for any common use, and GIS tools do make possible a narrow interaction/integration between data (both input data and output ones) representation and processing; what suggested to (somehow sarcastically) talk of the full accomplishment of the historical mission of urban modelling (Rabino, 2011a). Nonetheless, just when we observe such a complete and even unexpected achievement, what leaps out is the dramatic gap between the capability of the available modelling tools and their actual use we can't but notice in current town planning: not only are they, as a matter of fact, scarcely used to support and address planning choices, but their field itself seems to have loosen interest, as though the main focus had gone shifting elsewhere. No more (or, at least, not often) is the large-scale development plan the fitting territorial scenery: local areas transformation projects actually do, in most cases, hold the scene. No interest (or, at least, poor attention) towards the managing of land uses and the interaction of activities, that is the functional state of the settlement: the morphology of urban space (either built and open air space) actually seems to catch any attention. Such emerging conditions, mainly determined by the epochal crisis of urban planning in the ending of XX century, appear so as to make territorial models ineffective, paradoxically just in the moment of their actual usability. A deep gap between design and modelling has then gone widening, so as to determine a compartment between the shaping of the transformation of urban space and the predicting of its effects on the (material and immaterial) variables that describe the phenomena occurring inside: a gap that is anything but unessential, since it involves some difference of scale (urban design being limited within an infra-urban scale, modelling extended on a territorial scale) but even more a radically different approach: irrational aesthetic intuition as well as subjective sensitiveness lead the design of urban shapes, a scientific and objective methodology is the condition of territorial modelling.

In order to bridge such gap, different kinds of models are actually required, provided with two specific features. First, an actual capability of working at a small scale, so as to provide highly detailed results even if referred to small local areas of the urban settlement. Moreover, an actual sensitivity towards the urban morphology, so as to make them capable to appreciate the spatial features of the settlement and their planned material transformation as well. Among them, the spatial analysis techniques based on the configurational approach are here briefly presented and discussed, with the specific purpose of highlighting their capability of supporting the evaluation of urban plans and projects.

Backgrounds

The configurational approach to the analysis of urban settlement was introduced as space syntax in the mid 80s (Hillier, Hanson, 1984) and then developed and strongly certified as a reliable and powerful tool for the spatial analysis of urban settlements. So far, several operational techniques have been proposed and used, side by side with the original version introduced by Bill Hillier; each of them has been widely applied and tested, and presents its own features and assets as well as its specific faults, so as to fit different particular cases or circumstances. Yet, all the different techniques, although significantly different on few regards, still share some common elements, which were placed by Bill Hillier at the very root of the configurational approach (Hillier, 1996a). First, the assumption of the grid as the primary element in the distribution of movement along its paths, what makes it also a decisive element in the location of activities. Such assumption is based on the fundamental hypothesis of the existence of the so-called natural movement, that is a portion of movement that is determined by the grid configuration itself, and hence does not depend on the presence and on the location of the actually located activities (Hillier et al., 1993). Taken for granted the fundamental importance of the spatial grid of a settlement, a second prominent assumption of the configurational approach is the exclusive interest towards the relations connecting every spatial element of the grid to all the others, hence putting in the shadows the geometric and morphologic features of such elements, as well as the actual land use of urban space. A third basic element all the configurational techniques do share is the importance of perception in the understanding of the urban grid, from which derives their common topological approach.

From a merely operational point of view, all the configurational techniques work by reducing the urban grid into a discrete set of spatial elements, and then analyse such system providing each spatial element with a set of numeric values corresponding to as many parameters, called configurational indices. The point where the configurational techniques do actually divide and distinguish each other is the way of reducing the urban space into the system to be analysed.

Among the full set of the existing configurational techniques, by far the most known and used (as well as the first one to be introduced, by Hillier himself (Hillier, Hanson, 1984)) is the axial analysis, which reduces the urban grid into a set of segment, called lines, linking and covering all its spaces; the graphic representation of that system is called axial map. The most significant configurational indices (and those we are particularly interested in, in the following of the present paper) are connectivity and integration. The connectivity value is the number of lines directly connected (what means intersected) to the observed one; the integration value is the mean value of depth (what means distance, topogically appraised as the number of the interposed lines along the shortest path which links them) of a line with respect to all the others in the system. This last index can be appraised at a global scale (or radius n integration, if all the lines of the map are taken into account), as well as at a local scale (or radius k integration, if only the lines lying in a circle with radius k around the observed one are taken into account).

A different configurational technique is the so-called Visibility Graph Analysis (namely VGA), which reduces the urban grid into a system by its complete covering by means of a mesh of points (vertices) distributed with a selected density, so as to reproduce at the required level of detail the morphology of the urban space. This method, which shares the same conceptual basis of axial analysis, allows a two-dimensional analysis of the settlement and provides far better detailed results; on the other side, it is computationally far heavier, and its results can hardly be managed so as to be exported and used or processed in further applications.

The high relevance of the configurational index called integration value derives from several researches so far, which have demonstrated its narrow correspondence with the distribution of urban centrality. In fact, integration was proved a reliable indicator of the distribution of natural movement (Cutini, 2001), and hence a suitable parameter for marking out the distribution of movement-seeking activities. If we assume urban centrality in terms of appeal and attractiveness toward activities, the distribution of its levels can therefore be reliably reproduced by such parameter (Bortoli, Cutini, 2001).

The outcome mentioned so far is referred to the actual consistency of urban settlement, and it demonstrates the usefulness of the configurational techniques for the understanding of their inner geography, so as to pinpoint the elements that are likely to be the cause of high positional appeal (and hence also high land values), or, on the contrary, the likely causes of spatial segregation and marginalization. Furthermore, if the same techniques are applied to a former urban consistency, or, better, to a full series of successive grids, their result can be used for a better comprehension of the diachronic genesis of the settlement: showing, for instance, the likely cause of the shifting of appeal and centrality from an urban place to another, as well as the reason of the development and decay of different parts of the settlement. Still, both the synchronic and the diachronic application of configurational analysis are referred to an actual urban consistency, and hence aimed at improving its mere knowledge. On the contrary, the use this paper is going to propose is addressed to the planned consistency of the settlement, which is assumed as an hypothesis and can be subjected to analysis and evaluation, so as to support the decision making on its actual advisability.

The evaluation of plans and projects

Since the configurational techniques, as it has been sketched so far, assume the configuration of the urban grid as their input variable, any material transformation of the grid can be analysed so as to determine its likely effects on both material and immaterial phenomena, such the distribution of movement flows, activities location, land use, etc. Each development plan, either extended all over the settlement or strictly limited in a local urban transformation, does in fact involve some (large or small) modification of the urban grid, so as to provide a wholly different configurational state. The configurational techniques can hence be applied to simulate and highlight the actual effects of any planned transformation on such aspects. In particular, what appears worth investigating is the distribution of the levels of centrality as a consequence of the planned transformation: what is likely to be noticeably modified (and sometimes even upset) as soon as the plan gets actually developed, and what the configurational analysis can reliably reveal. As specific examples, in the followings two case studies will be presented and proposed in order to convince about the actual utility of the configurational analysis techniques as town planning support tools. The only requirement a town plan does actually impose, in order to be subjected to such analysis, is that its indications ought to be expressed in an iconic way, so as to reproduce (at an acceptable details level) the predicted material shape of the urban space. Such requirement was seldom satisfied in the 60's and 70's, when symbolic methods of representation were largely prevalent, but are actually often found in nowadays town planning technique.

The first example is an old case, the 1965 Piano Regolatore Generale of Pisa, by Luigi Dodi and Luigi Piccinato. Such town plan is still well known for what at that time appeared as a courageous choice, that is the interruption of the isotropic radial sprawl of the city in favour of a unidirectional growth, which was oriented toward the far eastern sub-urban areas of Cisanello. The declared purpose was the lightening of the congested inner core by means of the construction of Pisa Nova (this was the explicit and unequivocal name of the new district), which was expected to attract activities eastwards. Still nowadays, after 45 years, such an ambitious purpose can be said anything but achieved: the inner core of Pisa still stand as the very, unique centre of the settlement, and it's still strongly congested with activities and traffic; on the contrary, the 60's new development area of Pisa Nova, although completely grown according to Dodi-Piccinato's plan, can hardly attract activities, since its positional appeal surely cannot match against the historic core of the city. These, as they can be described in few words, are the facts; what is interesting for our purpose is the actual possibility of predicting such result by means of the configurational analysis of the transformation that was drawn in the 1965 PRG by Dodi and Piccinato. In fact, if we reduce the planimetric established consistency of the city into an axial map, and then analyze it by axial analysis, we are going to find out that the area of Pisanova, at the eastern end of the settlement, is actually so segregated as to hardly be appealing for any movement-seeking activity, while the most integrated (and hence most attracting) part of the settlement is still concentrated in the inner core of Pisa, within its ancient town walls. As we noticed above, this configurational state does actually match with the real functional consistency of the settlement: in other words, in these last decades most of the economic activities have not followed the indication of an oriented decentralization, thus disregarding the general purpose of the plan, wiping out its strategy itself. What a careful analysis of the grid configuration, at that time, would have unequivocally predicted and warned.

A further example of such application of configurational analysis is more recent, as it goes up to the early 90's. We are referring to the 1991 Piano Regolatore Generale of Grosseto by Alberto Samonà, which is currently still in force. Its main indications are summed up in the general map here reported in figure 1c.
Since the planning indications are here described at a highly detailed level, up to the material shape of streets, blocks and (sometimes) even buildings, it is possible to associate this plan to a predicted urban grid, which can be assumed as a basis for the construction of the axial map. This map is here reported in figure 1d. Its processing will hence provide, reproduced by the resulting values of global integration, also the distribution of the levels of urban centrality that the actual oncoming fulfilment is likely to determine. On such basis, the following figures 1e and 1f respectively report the distribution of global integration value in the axial map corresponding to the actual urban consistency of Grosseto at 1991 and the distribution of the same parameter as it result from the processing of the map that corresponds to the PRG indications of figure 1c.

The representations of figures 1e and 1f can then be easily compared in order to appreciate and highlight the main differences, which actually summarize the effect of the observed town plan on the inner geography of the settlement, and in particular on the distribution of the levels of centrality all over its grid. Among them, we can notice in figure 1f the predicted making of a strongly segregated area around the northern edge of the settlement, and, on the other hand, the significant enhancement of the centrality of its western district, which is likely to depend on the planned building of some road connections over the railway.

In addition, it's worth specifying that not only general town plans, as those mentioned above, can be analyzed and evaluated by means of the configurational techniques; also any local plan or project, if only determining some transformation of the shape of urban space (blocks, streets or squares), is likely to involve some modification of the urban grid, and hence some variation of the configurational structure of the settlement that configurational analysis can make to emerge. We can then think of local areas development or rehabilitation plans, but also to the punctual realizations, such as the opening (or closure, of course) of streets, the building of bridges or overpasses, and so no: in all these cases, the likely effects of the projected transformation on a wide set of (material and immaterial) variables can be reliably pointed out by the techniques of configurational analysis.

Conclusions

The discussion so far can be here briefly summarized as follows. The configurational approach to the analysis of urban spaces not only is a powerful and reliable tool for the knowledge, the understanding and the comprehension of the inner geography and the diachronic genesis of an urban settlement.

In that such approach can be applied to the planned (that is the future) consistency of a settlement (rather than to the actual or the former one), the outcome of their processing is capable of providing useful (and sometimes necessary) information on the likely effects of the oncoming transformation.

Such effects are generally affecting a wide set of (material and immaterial) variables, representing several urban aspects and phenomena: the distribution of movement flows, the location of economic activities, the trend of land values, and so on.

On such basis, the use of the configurational techniques can be proposed as a decision making support tool for the inner comprehension and the evaluation of urban plans and projects: they are capable to provide an objective view of the resulting configurational structure of the settlement, which can be easily compared with the existing one and, even more, with the declared purposes, with the general strategy and the territorial choices the plan actually contains.

Acknowledgements

This paper is an outcome of a joint thinking of Valerio Cutini and Giovanni Rabino over the contribution of configurational analysis to evaluation of urban plan and projects, on the bases of operational works done by Cutini.

References

Cutini V., *Centrality and Land Use: Three Case Studies on the Configurational Hypothesis*, "Cybergeo, Revue Européenne de Geographie", n. 188, 26 mars 2001.

Cutini V., *La rivincita dello spazio urbano. L'approccio configurazionale all'analisi e allo studio dei centri abitati, Pisa*, Pisa University Press, 2010.

Cutini V., Rabino G., *Does Accessibility shape land use? Or, does land use shape accessibility Or do both?*, in M. Pezzagno and S. Docchio eds, Atti della XVIII Conferenza internazionale Living and walking in cities. Sustainable mobility and road safety, 16-17 giugno 2011. pp 1-8 (forthcoming)

Hillier B., *Space is the Machine. A configurational theory of architecture*, Cambridge, Cambridge University Press,1996a

Hillier B., *Cities as Movement Economies*, Urban Design International, 1, vol. 1, p.29-60, 1996b

Hillier B., Hanson J., *The Social Logic of Space, Cambridge*, Cambridge University Press, 1984.

Hillier B., Penn A., Hanson J., Grajevski T, Xu J., *Natural movement: or, configuration and attraction in urban pedestrian movement, Environment and Planning B, Planning and Design*, vol. 20, pp. 67-81, 1993.

Rabino G., *Modellistica: mission accomplished*, in EyesReg, vol.1, n° 1, 2011a

Rabino G., *La città densa-rarefatta. Le trasformazioni urbane tra concentrazione e dispersione*, *in Atti della XIV conferenza SIU - Abitare l'Italia. Territori, economie, diseguaglianze*, 24-26 marzo 2011, www.planum.net, pp. 1-7, 2011b

Turner A., Depthmap. *A program to perform visibility graph analysis, in Proceedings of the 3rd Space Syntax Symposium*, Atlanta (GA), 7-11 May 2001, Alfred Tauban College of Architecture, University of Michigan, 2001.

Figure 1

a - The 1965 PRG of Pisa, by Luigi Dodi and Luigi Piccinato. General Plan

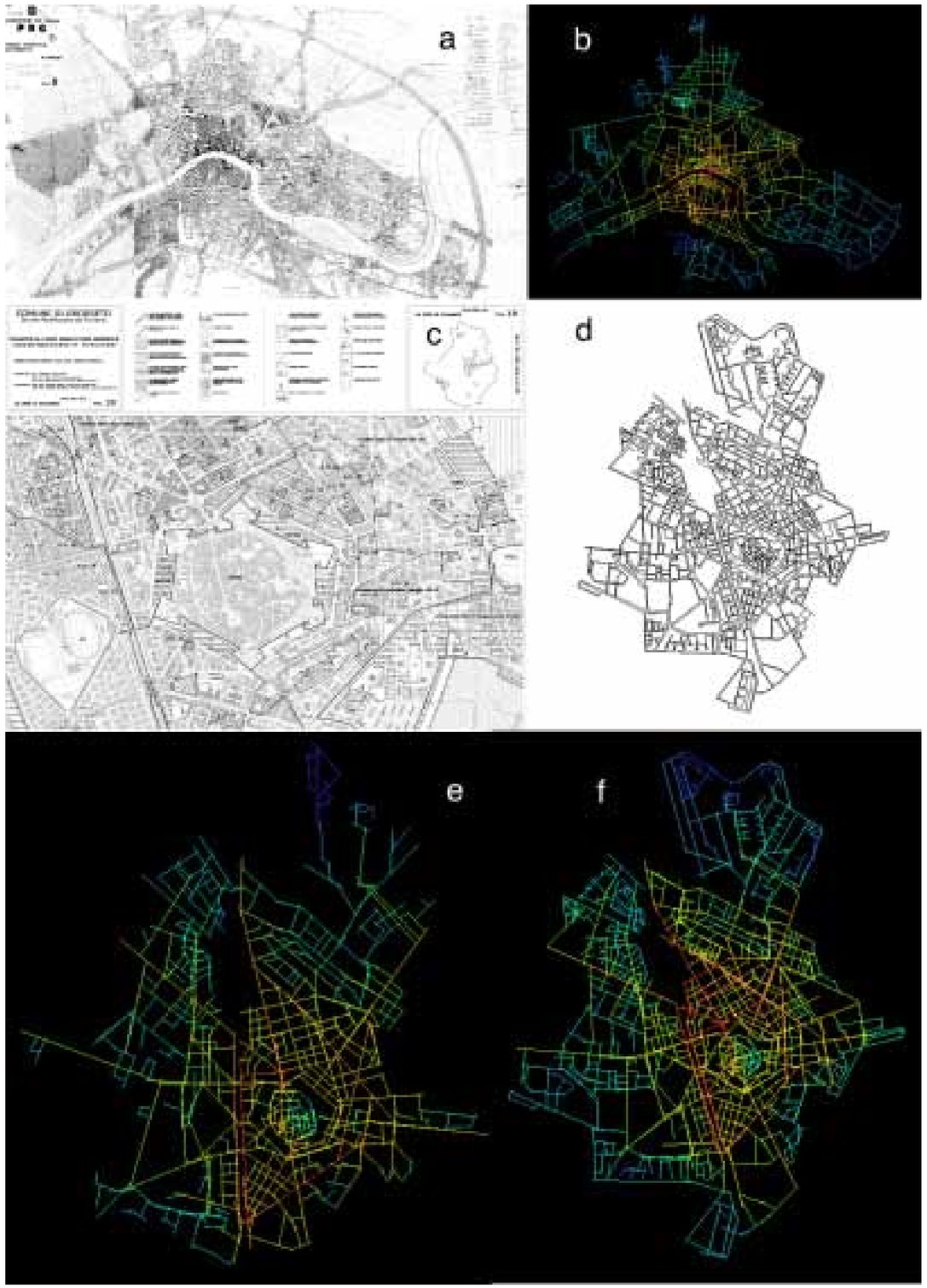
b - The distribution of global integration in the grid of the 1965 PRG of Pisa (a)

c - The 1991 PRG of Grosseto, by Alberto Samonà. General Plan

d - The urban grid associated to the 1991 PRG of Grosseto

e – The distribution of global integration in the urban grid of Grosseto at 1991

f - The distribution of global integration in the grid of the 1991 PRG of Grosseto (d)



Giuseppe Francesco Rociola
Politecnico di Bari, Italy

Cities of salt. Toward a new analysis method for a new planning strategy

1. Introduction: the Salt Cities between development problems and landscape value

The study of the transformations involving the coastal cities is an important field of research, focused on the urban development by virtue of two-way relation between the expansion of settlement and the preservation of urban characteristics and landscape. These last are rooted in the main vocation of coastal territory, which consists in the relationship between the waterfront and the urban structure in development along the coastline. There are special places in which this critical issues are expressed with great intensity: they are the "salt cities", developed in symbiosis with the coastal saltworks and their ponds,[1] urban organisms always conditioned by the salt harvest, the water circulation and the boundaries of the narrow sand bars between the coast and the inner edge of the lagoon. Among the salt cities in the Mediterranean, there are some who have particular issues of transformation: the urban structures of Margherita di Savoia in Apulia, Santa Pola in Spain, Aigues Mortes - Grau du Roi in France, are closely related to the saltworks, their embankments, their ponds and canals, characterized by industrial harvest and big production.[2] The contiguity between these cities and the saltworks is reflected both in the transformational processes and in the aesthetic "structure". But this specific identity is now at the center of speculative interest to meet the increasing demand for building, in contrast with the salt harvest and the international conventions on environmental protection. The proposed study is only a step of a research in progress, with the aim to find an alternative approach of analysis, as a synthesis among methods who can decode the urban structure and its salt context, in relation to dichotomous instances expressed by the production of salt, natural identity and perceptual characteristics of a unique landscape.[3] The salt palimpsest of Grau du Roi, chosen as a case study, is characterized by the rapid development of tourism in relation to the saltworks, that for ages influences the morphology of the delicate habitat in the Petit Camargue. Unravel the tangled skein of his characteristics, means achieve the knowledge necessary to configure innovative scenarios for the salt cities.

2. The method

For this first step, the analysis of the transformations is focused on the method "typological – processual", introduced by Saverio Muratori and further developed by Gianfranco Caniggia and its school. This approach considers the territory as a multi-scale organism, variable in time and space, characterized by the relationships between the anthropic structure and the natural structure, according to the sequence: type – urban fabric - urban organism - territorial organism. The process of transformation builds the anthropic palimpsest, rooted in a specific geographical–cultural area;[4] in particular, the palimpsest preserves the traces of human interventions, traces almost never erased by subsequent transformations, which inherit the constraints and invariants of the previous.[5] Knowledge of the physical structure as a historical process can be complementary to the study of the "cultural structure" of the salt landscapes, including aesthetic and perceptual values, environmental values, and the plot of historical events embedded in genius loci. The aim is to critically analyze the characteristics of the salt cities, in the belief that the "intersection" of methods can be used to determine a conscious strategy of development.

3. The salt landscape of Peccais - Aigues Mortes: from the natural lagoon to the anthropic palimpsest

The saltworks of Peccais, in western Camargue, are part of a lagoon located between the Western Alps to the east and the mountains of the Cevennes to the west, in which flow the rivers Rhone, Vidourle and Vistre.
A series of lagoons and wetlands are extended from the Rhone delta up to the coastal ponds toward Spain. The exploitation of lagoon of Peccais has an ancient origin: already Phoenicians, Greeks and Romans knew the "salt vocation" of the lagoon. The structure of the coast was described by Pliny the Elder, as a marshy area enclosed between two branches of the Rhone.[6] In the thirteenth century Louis IX of France founded the walled city of Aigues Mortes in the northern part of the saltworks, for have a commercial port in the Mediterranean and an embarkation point for the Crusades.

This fact changed the natural structure of the landscape, through the introduction of a "rational form" in the marshy territory. Defying the tendency of natural wetlands of change the morphology, the people of Aigues Mortes fought for centuries against the floods of the Rhone. In 1552 a large spate deflected the Petit Rhone river to the south; in those same years Francis I modified the canal of Sylveréal to prevent the destruction of the saltworks. Even Charles V attempted to solve the capricious regime of waters, remodeling an old canal. In 1580 another flood eroded the sand bar separating the salt lagoon from the sea. Because of this a new canal was built to connect the port of Aigues-Mortes to the Mediterranean Sea, where the core of the settlement of Grau du Roi would be born, two centuries later (Albaric, 1975). The lagoon area had big changes from that moment, especially when new saltworks was realized in the early nineteenth century, through the subdivision of the lagoon itself in a cartesian system of coastal ponds, with embankments and canals (Leenhardt, 1939).[7] Just the reclamation by Louis Philippe, in 1823, solved the continuous silting. At that time, a community of fishermen began to settle on the coast that separates the saltworks from the sea, at the point of intersection with the mouth of the canal. Over two centuries, then, the progressive development of the urban organism has modified the structure of the coast, naturally unsuited to a stable life.

4. Grau-du-Roi. Structuring processes of the urban palimpsest

The birth of the coastal settlement, as we have seen, was favoured by transformations, natural and anthropic: the silting of the ports of Aigues Mortes between the fifteenth and sixteenth century, one of the main reasons causing the economic decline of the city; the change of current in the Gulf of Aigues-Mortes, which favoured the accumulation of river debris and the formation of sand bar; lastly, in the late sixteenth century, the deviation of the Vidourle river into the lake of Repausset, to accelerate the ebb of water and prevent the deposit of sand on the bottom of the canal. These remedies, however, were in contrast with the opposite opinion of the directors of saltworks, worried that the increased volume of water could destroy the embankments. In 1725 a new canal, called Chenal Maritime, was realized to connect the sea with the port of Aigues-Mortes, trying to solve the secular opposition between silting of the harbour and safeguarding of saltworks. But only a century later, the opening of the Repausset basin into the Chenal Maritime solved definitively the problem, setting the basis for urban development of the coast. In fact, around mid-nineteenth century a community of fishermen lived in a village constituted by a series of huts, built in wood, tamarisks and saltworts, parallel aligned on both sides of the Chenal, together with the existing administrative and public buildings in masonry, that are the office of the village, the lighthouse, the customs station, the guard house and the defense towers of the military garrison. The "structure" of the village of huts, adopted to build the city in masonry, is synthesized from the Hippodamian scheme, distributed on both sides of the canal (fig. 1).[8] The develop of the city received an important contribution from Italian fishermen coming from Liguria, Calabria and Campania, which occupied the western shore, leaving the eastern part for local population. The diverse cultures of the people emerged from the not homogenous morpho-typological characteristics of the two urban cores: to the east, at the beginning of the twentieth century, the urban fabric was composed of row houses aggregated along the north-south paths that connected the coast to the saltworks, completed by orthogonal paths; along the western bank were located the main public buildings, that were the old lighthouse, the church and the town hall, in addition to the row houses who replaced gradually the huts (fig. 2). In the first half of the twentieth century, the construction of the railway Nimes - Aigues Mortes - Grau du Roi favoured the transformation of the fishermen village in a tourist city with hotels and beaches. In the mid-twentieth century the urban structure adopted two different strategies according the side of the canal: to the east, the original Hippodamian scheme was compressed between the coastline and the basin of Repausset; to the west the new houses filled the vacant lots among the Chenal Maritime, the evaporation salt ponds and the sea. Until the early sixties, the transformation processes on the coast maintained a coherent relationship between anthropic development and characteristic of the place, expressed by the water edges: the waterfront and the saltfront. After that time, the rapid growth of tourism development on the coast have interrupted this equilibrium, causing the abandonment of the Cartesian scheme that allowed a perceptual correspondence between the saltworks and the sea across the city. The present sprawl adopts the logic typical of many contemporary suburbs, with isolated houses without any correspondence with the original settlement characteristics, that continuously connect urban fabric with salt ponds (fig. 3). In thirty years, the conurbation along the coast between the Canal du Rhone to the west and the wetland of Espiguette to the east, has subtracted the space previously occupied by ponds and saltworks, with a consequent displacement of the saltfront towards inland. The highlights of the conurbation are the two extreme poles of Port Camargue to the east and La Grande Motte to the west. The first one is the largest marina in Europe and occupies the sandy peninsula of plage de l'Espiguette. The tourist housing of La Grande Motte rises instead on a reclaimed basin, drained through a colossal work of afforestation.[9] In general, the sprawl has a structure characterized by addition of different quarters, without a clear identity and a relationship between every area and the whole urban organism (fig. 4).

Because of the rapid development, the public places are concentrated in separate but interconnected parts of the city: the core of nineteenth-century around the Chenal Maritime, with the lighthouse, the church, the town hall and the commercial port to the west, the station, the train depot and the sport center in the north-east, the waterfront with hotels, beaches and facilities to the south. In little more than a century, then, the small fishing village located at the mouth of the canal linking Aigues Mortes to the Mediterranean Sea, initially forced to develop in the limited space between the ponds and the sea, has become a complex anthropic palimpsest who has given up his identity as a city between the waters.

5. From the "limes" to the "limen". Towards a new development strategy of the salt cities

The ability to make this land productive and livable, forces always the man to take appropriate solutions to balance the water regime, exploiting the productive potentiality, in particular the natural vocation to deposit salt. The strategy, improved over the centuries, consists by subdivision the lagoon in ponds, embankments and canals, which control water circulation in the phases of evaporation (Korovessis, 2009), thus transforming the natural landscape in a rational productive organism, often linked to particular settlements, founded and developed along the border of the salt ponds. The history of the salt landscape of Aigues-Mortes and Grau du Roi, as in other case studies in the Mediterranean, is tied to updating of water circulation technique and to the method of salt harvest. In this sense is evident the fundamental role of the water courses' modifications, the adaptation of canals for water flow and salt transport, the changes in the salt ponds to maximize harvest. These aspects had deep effect on the transformation process of the salt city, concentrated on the coast that connects the mouth of the Rhone and La Grande Motte, with the mouth of Chenal Maritime as centre of conurbation. The characteristics on which the identity of Grau du Roi and other similar salt cities are based, regard these aspects:
- correlation between the transformation process of the saltworks and urban development;
- correspondence of urban plots with the alignments of the salt ponds;
- orthogonal scheme as spontaneous planning strategy, coherently with the constraints imposed by linearity and by limited depth of the sand bar;
- gradual increase of the distance between the waterfront and saltfront after the reclaim of the ponds, often used as a solution to retrieve new space for building, with the gradual loss of the urban characteristics.

The individual analyzed aspects are united by the essential element to identify these places: the water. The characterization that it gives to the territory, in fact, strongly influences the transformations on the narrow sand bar between the sea and the saltworks, where the urban organism is located. These considerations and the investigated critical aspects are crucial to trace some useful guide principles for a possible development strategy for the salt cities. First of all, the salt lagoon should not be seen only as a natural resource, but as an anthropic structure "in transformation" closely linked to urban phenomena. This is important in relation to the opposition "in actu" between the building activity and the landscape conservation, which, paradoxically, is more threatened as much more regarded outside of the urban processes. It is therefore necessary a cultural change to preserve the ponds located along the saltfront, not only for environmental reasons, but as urban strategic resource on which to invest. The second guide principle can be identified in the preservation of the local culture of building the embankments, updating the dialectical relationship between knowledge and know-how. It can be shown, in fact, as the technical development in water management and the corresponding urban development, tend to evolve according to the technical update applied to the local materials, ensuring the maintenance of genius loci. [10]

The third guiding principle includes all previous and introduces a further element of reflection: it regards the new role of the saltfront, "place" of the salt city that express the essential characteristic, a delicate edge of contact between the city and the ponds. The saltfront summarizes the age-old conflict between the rational domain of disordered waters and the extreme and paradoxical act of bending the nature, transforming an unhealthy malarial area, often fatal, in a place suitable for life. In the present phase of urban development, the saltfront is considered as a "limes" (fig. 5, 6), or rather the abandoned margin of the salt cities that, contrary to its central role in the palimpsest, is often a residual and degraded area. For centuries the saltfront is been the core of activity related to the saltworks, threshold of junction between the frantic activity of harvest and the city who take life from it. In continuity with its history, therefore, it is necessary to intersect the environmental value of the lagoon with the "cultural structure" that allows to identify the aesthetic-perceptual value. It is therefore necessary that every innovative strategy of development of salt cities considers the saltfront as a "limen", i.e. a "signifier node" in which the urban renewal is focused, according to its originary characteristics. Only interpreting the saltfront as a "limen" (node and threshold), beyond the concept of "limes" (boundary), it is possible, perhaps, give new meaning at the saline origin of these particular cities.

Giuseppe Francesco Rociola
Politecnico di Bari, Italy

Notes

[1]. The working of a coastal saltworks is based on the physical principle of evaporation. The sea water is introduced into the first basin through the use of draining pumps. The combined action of the sun and wind reduces its volume, while the salt concentration increases. The brine, at different phases of the annual cycle of the water, circulates among all basins by exploiting the natural slope and lift pumps, completing the evaporation in so-called "salting ponds" where sodium chloride precipitates to the bottom of the pond, due to the high concentration reached.

[2]. It is possible to classify the saltworks according to the type of harvest, from the traditional to the industrial. In the case of the salt cities, the type of harvest is decisive, because it corresponds to a different degree of complexity in the structure of the palimpsest. All the typical issues of these places are amplified in the cities developed in symbiosis with industrialized saltworks.

[3]. The research on the topic began with a PhD in Architectural Design, awarded by the Department ICAR of the Polytechnic of Bari (Coordinator, prof. C. D'Amato, Tutor, Professor. A. Petruccioli), further developed through international workshops of urban design held in Margherita di Savoia between 2002 and 2006 (coordinators, prof. C. D'Amato, prof. A. Petruccioli; tutors: prof. A. Riondino, Arch. G. Rociola).

[4]. The geographical–cultural area is a part of a territory which has common characteristics of the "type" at different scales.

[5]. The teaching of the processual typology at the Faculty of Architecture at the Polytechnic of Bari is focused on prof. G. Strappa, prof. A. Petruccioli, prof. M. Ieva.

[6]. See: Plinius Secundus Gaius, Naturalis Historia, historiae mundi, vol. III, Venice, 1844

[7]. This fact constitutes the transition from the natural and empirical exploitation to the systematic organization of the water cycles.

[8]. Urban development, initially hindered by coastal erosion, is concentrated mainly on the west bank of the canal. With the planting of grasses, trees and tamarisks, the phenomenon has been reduced, finally resolved in 1954 with the construction of breakwater in the sea, orthogonal to the coast.

[9]. This work has gradually consolidated the soil, creating a vegetal barrier to protect the area against the water erosion.

[10]. The canes and tamarisks used for the embankments until XVIII century, are also used to build the huts given over to house the workers. The updating of embankments, during the XIX century, with the introduction of stone materials, coincide with the transformations in the urban structure: in the saltworks of Grau du Roi, the "pierre du Gard" is adopted to protect the embankments, and build the settlement.

Legenda

Fig.1. The salt landscape of Grau du Roi in relation to the urban sprawl and the saltworks.

Fig.2. Transformational process of the urban structure. End of XIX century. (G.R.)

Fig.3. Transformational process of the urban structure. The saltfront-waterfront in the first half of XX century. (G.R.)

Fig.4. Transformational process of the urban structure. The saltfront-waterfront in the present phase. (G.R.)

Fig.5. The transformations in the relationship among the urban structure: the saltfront and the waterfront in the first half of XX century.

Fig.6. The transformations in the relationship among the urban structure. The saltfront and the waterfront in the present phase.

Bibliography

Albaric, A., *Le Grau du-Roi*, Edition du Vent Large, Francia, 1975

Di Pietro, F. Em., *Histoire d'Aiguesmortes*, Lacour editeur, Paris, 1849

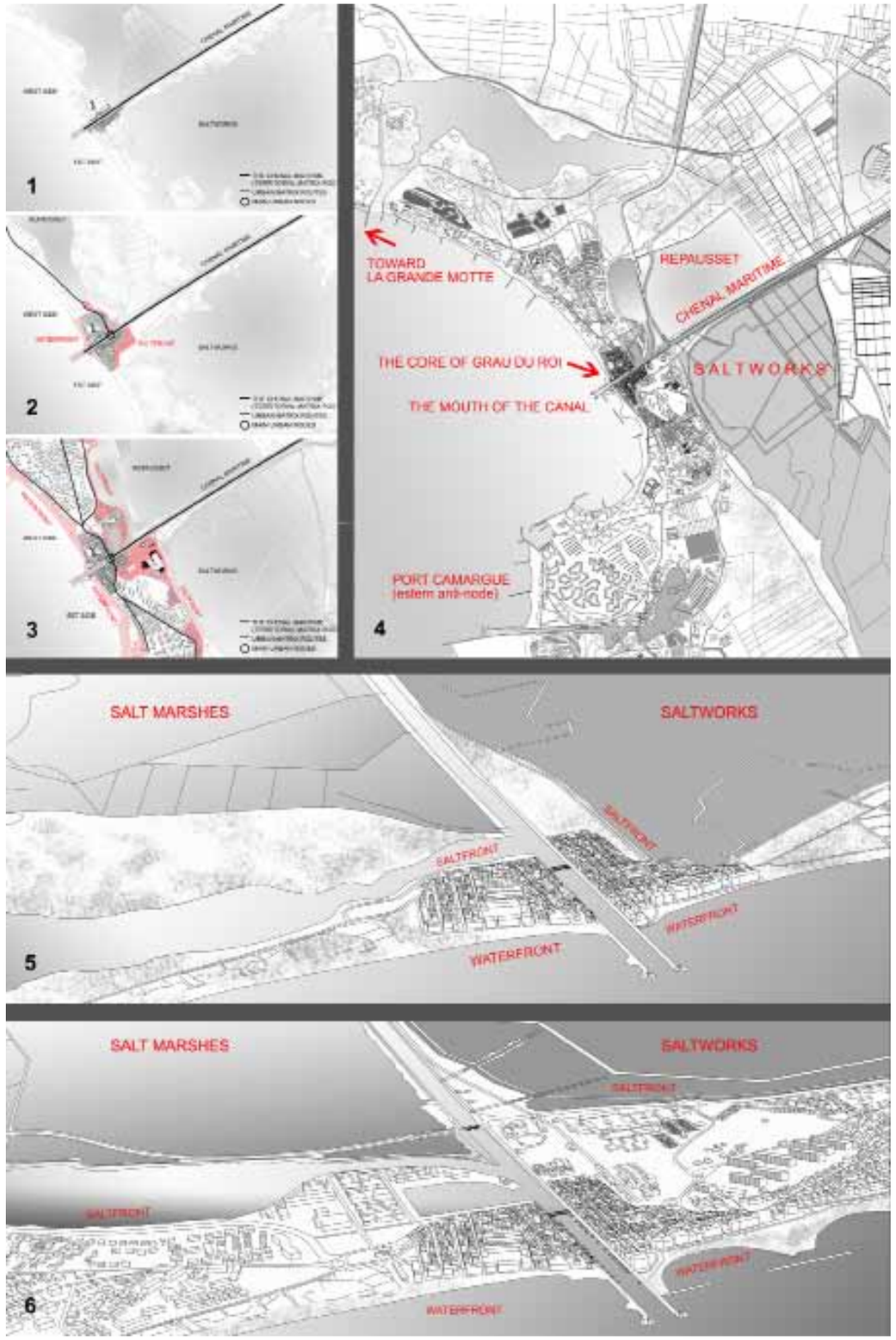
Hocquet, J. - C., *Le sel et le pouvoir : de l'an mil à la Révolution française*, A. Michel, Paris, 1985

Korovessis, N. A., et al., *Solar saltworks production process evolution – wetland function*, in: «Global NEST Journal», Vol 11, N. 1, 2009

Leenhardt, A., *Les salins du Languedoc*, Impr. Sadag, Bellegarde, 1939

Villain-Gandossi, C., *Les salins de Peccais au XIV siécle d'après les comptes du sel de Francesco Datini*, in: «Annales du Midi», 1968

Rociola G., *Margherita di Savoia - Aigues Mortes: Paesaggi salini. Le forme dell'acqua e il palinsesto insediativo / Margherita di Savoia - Aigues Mortes: Salt landscapes. The shapes of water and the settlement palimpsest*, Artigrafiche Favia, Bari, 2011



Ana Ruiz
University of Navarre, Spain

The idea of complementary uses to the residential in the city growth strategies

1. Abstract

In the course of the last decades, the city has developed as never before, and its configuration represents a potential testing ground to be studied from many different perspectives. When referring to the collective uses in the city, this topic turns into the content of many geographic studies, sociological approaches to the social organization and interaction in the city, or urban policies. At this point, an interdisciplinary methodology and projective approach is highly referred in the several studios and projects about contemporary cities and their transformation. It is specifically remarkable the influence that some of these approaches had in the definition of projectual growth strategies developed by the urban planning discipline in the second half of the twentieth century. Within this context, and in order to understand the spatial transformations of the contemporary city, the paper explores, in a practical perspective, the role of the collective uses patterns in different projectual strategies that have been identified. At this point, the paper not only exposes the mutation of the collective uses when referring to the social organization in the urbanization process in the contemporary city and the different ways of occupying the territory, but contends that it is difficult to evaluate the accuracy of those terms in the urban planning discipline with no reference to its urban dimension as well.

2. Introduction

In order to attain this aim, the paper analyses a specific case of study so as to identify the influence that the concept of social organization had in the projectual approach and urban dimension of the city. To be specific, the study will focus on the relationship between the role of collective uses in the city and the main projectual strategies identified in the three Masterplans that were developed during the last fifty years in the city of Valladolid, Spain. The research will refer to some urban experiences that give reason to the urban dimension in the implementation of those projectual strategies in a specific context.

Previous to the exposition, it is necessary to refer that this research is based on the historical approach as the device that provides very precise knowledge of urban facts . At this point, we should point out that this approach is not subject to a causality relation that tries to explain urban facts[1] and their chronological correlation with the present. That is to say, the reason why this studio focuses on a historical approach of the urban transformations is not an account of facts based on chronological deductions, but to clarify those urban transformations - provided with the necessary social, political and economic frameworks- in relation to the role of collective uses in the city.

In this paper, collective needs will be referred as those collective uses enclosed to the residential areas (complementary uses to the residential ones), which provide them with certain enhancements. Traditionally, the urban discipline has specified those collective needs through the concepts of equipment, facilities and services as it follows: the notion of equipments refers to those pieces of land and uses necessary for the required mixture of activities of any residential space; facilities are those essential uses reclaimed for the maintenance of the social structure; whereas services are referred to those uses of universal practice necessary for functionality in the city (Hernández Aja, 1997). As a result, a variety of urban pieces are identified by their different linkage to this order, either public space, service activities or economic retail, just to quote some of them.

Having mentioned all the above, this article is structured in three main sections. The first part of the text will focus on the analysis of the 1968 Masterplan and the consequences that community-urban theories had in the systematization of minimum urban units, both in the projectual strategies approach and specific urban interventions. The second part will expose the 1984 Masterplan and its later update (1997) so as to explore a new projectual strategy, focusing on the inference that it produced for the urban dimension of the city. Finally, as a conclusion, the last section will be dedicated to outline certain consequences of the projected strategies for the urban transformations of the city.

3. Addition and Autonomy.

The 1968 Masterplan[2] for the city of Valladolid represents one of the clearest examples of "dinapolis" within the Spanish territory, that is to say, the notion by which the city would not be reduced to the concentric core strangled, but will expand parabolic and geometrically along a rectilinear axis' system (Doxiadis, 1964). Besides that, it drew up the contribution of complementary uses to residential in the new planed residential areas according to the appliance of the "Communities' Theory" (Durán Lóriga, 1964), that had been developed in the sixties. This study defined the minimum input of complementary uses to residential in relation to the population of the new neighborhoods arranged.

Firstly, the basic neighborhood unit was conceived as a primary level of social interaction, opposite to the second one (community-society, Tönnies, 1947). That is to say, while primary level of social interaction, community life patterns, defines a direct and personal relationship between people with no specific utility purpose, the second level of social interaction, society, is ruled by relations based on the interest in a specific aim. As a result, the minimum unit was considered as a family life-community patter whose main function was the residential use: neighborhoods, school districts turned into the common scenarios of spontaneous interaction.

In the applying to the case of Valladolid, and explicitly detailed in the Masterplan, the technical standards for the minimum development of residential areas considered suitable a 20.000 inhabitants community unit (named as C-4)[3]. The configuration of this minimum unit would be drawn by the quantification and general distribution of the required collective elements in them, from the basic requirements -such as community garden, primary school, commercial retail- to the greater scope of use -public parks, high schools, commercial areas, civic centers- (Fig. 1).

Secondly, the complementary uses to residential provided not only the condition of autonomy required to each of the minimum units (Alomar, 1955), but the logic of hierarchical aggregation as well. At that point, those complementary uses were organized in entirely hierarchical levels according to some specific criteria such as size, population, boundaries of each of the different units in addition to the location, frequency or distances. That is to say, from the aggregation of minimum units there were defined new more complex autonomous units characterized by new complementary uses to residential of a greater scope of use[4].

During the time that the 1968 Masterplan was in force, there were managed more than 600 hectares of new occupied territory, a similar area to the historical core of the city[5]. The uni-directional south growth of the city was enclosed by the orthogonal geometry of the road network. The Masterplan proposed the extension of the city as a repetitive process where the assemblage of small minimum units defined a potentially infinite growth, and where the structural axis represents the location of main collective uses: the expansion of the historical core main activities.

The story of Ribera de Castilla I

Ribera de Castilla corresponds to one of those community units expected to be developed in the close periphery of Valladolid historical core. As some bordering areas that had already turned into urban areas, the area of Ribera de Castilla –which up to the 70s had held different farms- was object of its first Local Plan in 1973 for the development of 30 hectares, and represents one of the most paradigmatic examples of the application of the addition strategy of the minimum urban units.

According to the specifications, the proposal was defined by six minimum community units, that is to say, the design of a residential area for 10.000 neighbors and the respective complementary uses to residential required for that type of community. In this case, a civic center, sport facilities and community gardens were account for the complementary uses to the residential ones. Moreover, in the searching for the autonomy and community life patterns related to the spatial organization of the neighborhood, the condition of legibility (Lynch, 1960) of each of the units was reinforced, not only through the definition of an inner public space as main public community areas, but through the definition of the commercial retail along the edge of each of the minimum units as well (Fig. 2).

However, the spatial consequences of the proposal drew a different perspective than the community features advocated in the Communities' Theory. It was clear the reference to the hierarchical addition strategy as a basic tool for the organization and growth of the territory, but at the same time, the spatial criteria defined were not so linked to the pursued principles of autonomy and community social interaction: high buildings raised up to ten-twenty floors, densities exceeded the 80 dwellings per hectare, or the occupation of relational public space between buildings by parking uses, just to mention some.

This first proposal for the spatial configuration of Ribera de Castilla area was not materialized, though it represents the practical attempt to introduce community life patterns in a context of urban complexity in the city of mid seventies. From this perspective, it was the organizational system based on proximity, location and quantification criteria the one that defined the local scenarios for the development of the city during the decades of the sixties and seventies.

4. Restructuring and Interconnection.

In the mid seventies, at the time the city increased its urbanized area almost twice and two main industrial areas were developed in the close periphery, the uni-directional expansion of the city turned into a saturated and congestive "oil stain" growth. The addition of the minimum residential units according to a hierarchical pattern of those complementary uses to residential provided basic criteria for the expansion of the city, but a lack of relations between those urban pieces and also between the autonomous system of complementary uses to the residential in the city and its surroundings (Ribas i Piera, 1982). Taking into account the initial 135 inhabitants per hectare that defined the urban context in 1980, the Masterplan aimed to reduce it up to 96 inhabitants per hectare. At this point, the extension of the city was conceived as an opportunity to provide with complementary uses to residential to all those areas, basically, unequipped, at the time that it reduced the occupation of territory from an uni-directional pattern to a radio-concentric one (Fig. 3).

Within this context, the 1984 Masterplan[6] focused mainly on vacant plots, urban interstices or lost spaces (Trancik, 1986) from which to provide, from different scales, a better distribution of complementary uses to residential in the existing urban scene. In this sense, the system of complementary uses to residential turned into a "modifiable" structure (Secchi, 1984) and redefined certain urban categories in order to focus on the social organization of the different times of the city. It is not a language about a hierarchical relationship between urban elements measured in terms of quantity or quality but in terms of adaptability and synergy.

In 1997, the Valladolid 1984 Masterplan was updated[7]. Although it kept the general growth scheme drawn by the 1984 Masterplan, it also introduced the concepts of "centralities and exchange-spaces" as new urban categories from which to identify and define potential locations prone to host complementary uses to residential, not only in a physical urban continuity, but in different areas of activity as well. That is to say, the analysis of activities in the city and its superposition at certain points of high intensity, set a relational pattern as a guideline for the growth of the city within the territory, based on the restructure and interconnection growth strategy.

At this point, this projectual strategy of interconnection highlights the scope of complementary uses to residential in specific locations. From the intervention in obsolete areas in the city, to the concentration of economic retails in containers of high economic efficiency, or the concentration of new facility centralities in the proximity of low equipped areas, the fact is that in each of the cases, the organization of these strategic nodes were conceived as the relational mechanism of the different areas of the city within the territory.

The story of Ribera de Castilla II

After the first failure in the development of the area in the seventies, Ribera de Castilla became one of those potential suitable areas in the city for the implementation of the restructure and interconnection of projectual strategies.

Traditionally, the north and east areas of the city were defined by their lack of complementary uses to residential with regard to the west and south area of the city. In particular, the very close areas to Ribera de Castilla were characterized in the sixties and seventies by a lack of public spaces and basic equipments and a very high density of dwellings. In the eighties, and thanks to inhabitant's participation[8] in the potential design and management of the public space of the area, Ribera de Castilla turned into the prospective area for the required demands.

Within this context, not only the urban intervention in Ribera de Castilla provided with the public space that was demanded by those action groups, but the area was set up with the renewal and restructuration of the very close existing urban areas and the new facility centralities as well.

If considering the urban renewals of the close existing urban area, the neighborhood called Barrio de España -an informal settlement characterized by the molinera house[9]- whose complementary uses were non-existent or very little equipped was restructured. As a common feature to these restructure interventions in the city, no new land was occupied but the neighborhood had regularized its urban patter at the time that there were defined specific facilities, gardens, squares and services in order to improve the quality of urban life to those areas. But if this renewal was developed in the eighties, it was not until the final years of the decade of the nineties that it was defined the centrality for the north area of the city, and which was drawn in the 1997 Masterplan update. Regarding its configuration, it represents the concentration of different complementary uses to residential in a specific location so as to constitute a center of attraction in the city, no matter the complexity of boundaries. At this point, the area bordered at north on a road network, the river at south, and at west on the Barrio de España. However, the core of the intervention lied with the development of a mechanism so as to connect residential areas with a shortage of equipments, economic retail of other facilities through the concentration of different containers of complementary uses to residential, providing an orthogonal grid for the suitable distribution of accesses and functionality of the whole (Fig. 4).

As a result, the urban intervention in the area of Ribera de Castilla provided the necessary contribution of the complementary uses to residential. It did not give answer to the size, location or proximity criteria that were drawn before, but considered its condensation in a specific location, which converged towards a strategic homogeneous pattern extendable to the whole city. This dominant perspective contends that the city, whatever its size, appears to be more determined by necessity than guided by a system of collective values which seek the maximization of facilities through the minimization of individual contributions (Solà-Morales I., 2002).

5. Final reflection

As a consequence of all the above referred, it has been revealed the possibilities of studying the city transformation through the system of the collective uses in the city. In the course of these few pages, it has also become evident, on the one hand, what the keys for the mutation of social organization concept during these last decades have been, from hierarchical levels to adaptability and suitability, and; on the other hand, how these two perspectives –projectual strategies and urban dimension- are illustrative of two complementary and necessary ways of thinking about the understanding of the city transformation process.

6. Bibliography

Alomar, G., *Comunidad Planeada. Principios de sociología aplicada al urbanismo y al planeamiento rura*l, Instituto de Estudios de Administración Local, Madrid, 1955.

Delgado, M. *Memoria y Lugar: el espacio público como crisis de significado*, Ediciones Generales de la Construcción, Valencia, 2001.

Doxiadis, Constantinos A., *Arquitectura en transición*, Ediciones Ariel, Barcelona, 1964.

Durán Lóriga, M., *Urbanismo, planeamiento de nuevos núcleos urbanos*, in «Revista Temas de Arquitectura», n.1, 1964.

Healy P., *Urban Complexity and Spatial Strategies: a relational planning for our times*, Routledge, London, 2007.

Hernández Aja, A., coordinator, *La ciudad de los ciudadanos, Dirección General de la Vivienda, la Arquitectura y el Urbanismo*. Ministerio de Fomento, Madrid, 1997.

Lynch, K., *The image of the city*, MIT Press, Massachussets, 1960.

Ribas i Piera, M., *Los denominados standards urbanísticos y su aplicación al planeamiento*, Escuela Técnica Superior de Arquitectura de Barcelona, Monografía 6.16, Urbanística III, Barcelona, 1982

Secchi, B., *Le condizioni sono cambiate*, in «Casabella», n. 498/499, 1984.

Solà-Morales, I., *Territorios*, GG, Barcelona, 2002.

Tönnies, F., *Comunidad y sociedad*, Losada, Buenos Aires, 1947.

Trancik, R., *Finding Lost Space. Theories of Urban Design*, Van Nostrand Reinhold, New York, 1986.

7. Legenda

Fig. 1: 1968 Masterplan, Figueroa Salas, J., La medida y la memoria, antología urbanística de Javier de Mesones, 1950-2000, Fundación Metrópoli, Madrid, 2000.

Fig. 2: Ribera de Castilla Local Plan, Municipal Archive of Valladolid.

Fig. 3: 1984 Masterplan & 1997 Masterplan update, Municipal Archive of Valladolid.

Fig. 4: Ribera de Castilla Local Plan, personal compilation & Municipal Archive of Valladolid.

Notes

[1] It was necessary to evaluate the urban interventions that were developed in the municipality of Valladolid during these five last decades. As a result, a catalogue of more than three hundred urban interventions has been edited. This data compilation gives content to the researching program that the Urban Planning and Design department of the University of Navarre is currently working on: Urban design in medium size Spanish cities. Cfr. *First Conferences of the Spanish contemporary urban development: the North of Spain*, exhibition in the Architecture hall faculty, Pamplona, 06/2011.

[2] The Masterplan was developed by Javier de Mesones and his office UIASA, and it was definitely approved in June 1970, Cfr. Municipal Archive of Valladolid.

[3] This (C-4) unit was compound by two secondary units (C-3), each of them were composed of two minor units too (C-2), and so on till the C-1 unit. Cfr. Municipal Archive of Valladolid.

[4] Gabriel Alomar, after having been working at the MIT in the mid forties, wrote some books where we can find this theme deeply developed (Alomar, 1947; 1955). At this point, it is clear the reference to the notion of neighborhood units developed some decades before by Clarence Perry and the work of the Regional Planning Association of America.

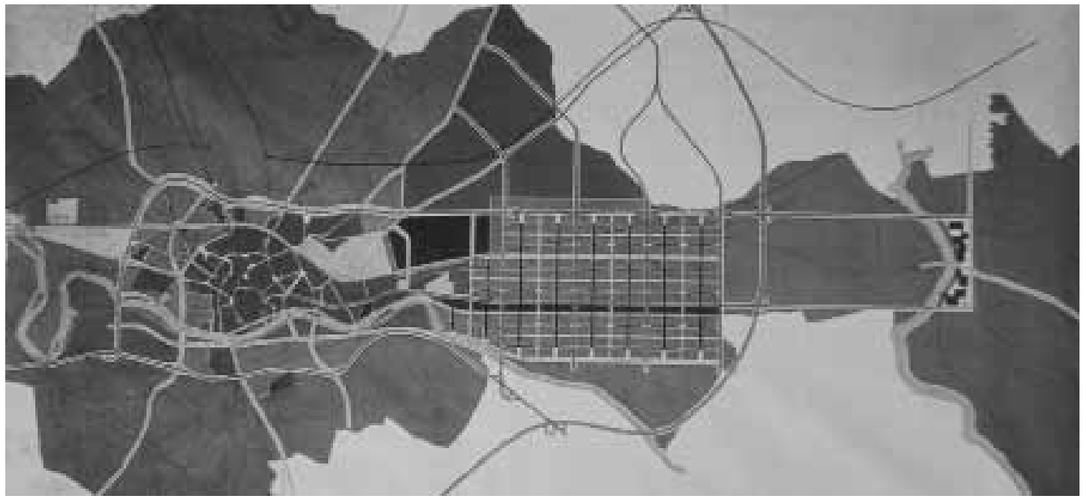
[5] In theory, and as it was referred in the different stages of the Masterplan, it was first planned to develop the urban units in the close periphery (130 hectares), keeping the traditional growth of the historical city. It was not until the following stages that the uni-directional growth of the city would be undertaken, neither south (300 hectares) nor west (270 hectares) pieces of land.

[6] The Masterplan was developed by Bernardo Ynzenga and his office, and it was definitely approved in June 1970, Cfr. Municipal Archive of Valladolid. This Masterplan was awarded with the accesit of the Spanish National Urban Planning Awards, Cfr. Diario EL PAIS, January 27th, 1984.

[7] The Masterplan was developed by the technical urban planners of the municipality, and it was in force by January 1997. In 2003 Valladolid Masterplan was updated, after the control of the urban planning was transferred to the regional communities and Castilla y León region developed its 1999 Planning Act.

[8] "The neighborhood should be a natural place for living, where dwellings, parks, cultural centers, public services, were at the service of personal enrichment and their context. But, on the contrary the logic that rules the development of the neighborhood is focused on an interest in dormitory cells, where people watch television as passive and isolated consumers. Isolated and automated human beings, this is the golden rule of all dominant urbanism", Part of a manifest that was advertised and distributed among the inhabitants through the Newsletter from the *Rondilla action group*, 1981. Cfr. Municipal Archive of Valladolid.

[9] In general, *Molinera* house defined a one-ground-floor building of an average area of 40-50 square meters, self-constructed by its own inhabitants with cheap materials and an easy distribution. This informal settlement experience had started in the last decades of the nineteenth century, lasting till the second half of the twentieth century, a period in which significant areas such as *Barrio de España, La Farola, Pajarillos Altos, Las Flores, Pilarica or Belén* were settled, just to mention some of them. Neither of them had equipments, public spaces nor basic services in their surroundings.



Soundscape and the identity of the place - The case study of Kichijoji station area, Tokyo

Abstract

This paper is a part of literature reviews chapter of the research on 'The impacts of introducing new transportation technologies to identity of the place'. This paper is focused on finding a way to define the boundary of the place by using another 'sense' which is the sound to classify the place as the 3rd dimension. Normally, the place is too complicated to measure and to show in scientific result. But the paper tries to create a tool by recording a video on the study site and evaluate it by using the de-layering and re-layering methods. The experiment has been made on Kichijoji station area in Tokyo. The research done on one street test to define the edge or the boundary between the commercial and residential area of Kichijoji itself where is difficult to define because of the fluidity of the commercial activities. The research comes up with a positive result that helps to understand the boundary of the place, but needed to be developed more in the future.

1. Introduction

The original Kichijoji was a temple town in Edo era. It was located in Suidobashi[1] area in central Tokyo (on the Kandagawa riverside near by Tokyo Dome), there were many shrines and temples around Suidobashi that time. After damaged by the World War II fire in 1657, most of Suidobashi area was burnt in the fire and need to be replanning the town with the fire protection structure. Kichijoji temple was moved to the North Tokyo in Honkogachome but its Kichijoji town was relocated far away from the temple which once was the center of the town. It is about 20 kilometers to the West of Tokyo in Musashino city where is the present Kichijoji location.
First settlement of the new Kichijoji town in 1657, it was just an urban village in the area. The Musashino City was found in the record as a city from 1659, after the second year of Kichijoji town relocation. The Kichijoji town without Kichijoji temple grew up as one residential town in suburb Tokyo until 1899, when the Kichijoji railway station was established. From that on, Kichijoji station became the new center of Kichijoji town instead of the temple in Hongo. There is a couple of religious places for instance temples and Shinto shines in that area.
Kichijoji town was originally a residential town from the beginning of this new location, but after the station established, Kichijoji had been changed. It becomes more commercial and crowded with its attractive facilities like Inokashira park which is established in 1913 (Tokugawa Shogun, Iemitsu) [2], Harmonica street (Yokocho) for the night life activities and the Sun Road shopping street which passed through the middle of central block Kichijoji. Present day, Kichijoji is a very popular place to enjoy leisure time with nightlife, shopping, art spaces and the beautiful public park. However, this paper focuses only on one experimental street in Kichijoji called 'Showa-Dori' in order to test the tool in the 1st part. Then apply to the other streets around Kichijoji station in the 2nd part.

Showa-Dori is the name of a street in the residential area on the north-western of Kichijoji station. The Showa-Dori is not an official shopping street like Nakamichi-Dori itself, but it's the connection between Daiyagai (West-dome shopping arcade in central commercial block of Kicijoji) and the residential area. Its particular aspect is the usage along the street, from the very high density to very less density in terms of commercial and activities. It is a good case to study where is actually the boundary or the edge of particular area of 'Kichijoji district'.

2. Theoretical framework

This research started with understanding the place which cannot deny what is so called social factor. Thus, it is necessary to study both place and community theories. Moreover, the city itself is everchanging, it is also needed to understand the place in globalization either.

"Place"

When raising the word 'place', it is usually defined this word by a formal geographical elements, but actually 'place' is very much about the phenomenology which cannot be bounded by only normal physical edge itself [3]. Becoming one 'place' needed to concern about these two factors, which are 'time' and 'space'. Place does not representative only the geographical settlement, but it contains the other elements for instance, activities and users, and when the time passed with those activities' cycle, the meaning will emphasizes its identity to be tangible. On the other hand, to understand one place's identity, it has to have all three elements to analyze which are geographical, activities and meaning.
In fact, 'geographical' and 'activities' are measurable by the boundary itself (of both physical and activities as the district), but to measure the 'meaning' which each place has particular way of being itself is a lot more difficult to do it through the lens of sociology views because it is needed to study in depth and take a lot of time, but could be easier by the physical observation and secondary documents.
Relph(1986) provided the factors affected the way to define the place. Identity of the place could be perfectly defined by local people of those places, but it does not mean that it will be last forever. When the context of the place changed, for instance, the generation of local people changed, the way the place looked will be different both for local people and affect to the outsiders' view [4]. It is obviously said both 'object' and 'context' could be counted to represent identity of one place.
In the case of Kichijoji town, which has been relocated to Musashino city in Western Tokyo and affected from the introduction of the transportation technologies that brought commerce, mass movement of people and their behaviors into the town, is interesting to understand the radical changing in terms of 'sense' of the place even those structures also brought the 'placelessness'[5]. Kichijoji town was originally settled on a rural area but the character of former Edo temple town still remains even without the Kichijoji temple itself as the city center. The Sun Road is the representative of the 'Monzen-Machi', the commercial and entertainment street leads directly to the temple gate in typical Edo temple town[6].

"Community"

Delanty (2003) mentioned about the 'Community' in ordinary meaning could be defined with geography boundaries and activities of local people who belongs to that community. Still the locality is normally based on a place which is very physical and touchable. In many definitions, the sense of place raised up to define one community by local people. According to the meaning of the place which needed to be defined by local people, but when the time-space expression phenomena happens, even local people itself has different sight to their own place. But still, the tools to define the boundaries of one community are these 4 elements [7];

First of all, *Symbolic*; the first impression to communicate with a community. However, the symbolic is a very beginning to understand place and community because it is based on geographic and physical elements. It is the effective of the sense of community communication which can easily seen by short term observation. The symbolic is a basic information to understand a community.

Second, *Locality*; the basic information to sense a place. Life style of local people will raise up the basic sense of community by living everyday life. The activity, language, food, tradition, culture is a part of locality. Even the boundaries of locality is not sharp to separate from another community nearby by physical term, but the degree of capacity is more important.

Third, *belonging*; the feeling of protecting something physical or even more untouchable. In some area, this kind of sense could be easily touched by physical elements, for instance, fence, signage, decoration or even just shown out some privacy belongings in the protecting space. This element is also provided in term of spiritual.

Fourth one is *communication*; the way to show up what is actually one community publish to another. According to the root of 'community' and 'communication', this could be the most important element to define the boundaries of community. This tool is used to show up the essence of a society which is its objective of assembling whether tiny or enormous .

"Globalization"

The identity of a city does matter in the globalization because its identity will identify the different character among the cities. Moreover, sustainability is another trend in order to concern about global warming situation and also in terms of social science. The famous concept one that usually referred to is 'compact city' which basically about being packed in a city with necessary facilities in order to decrease traveling cost (wasting time, consuming energy).

The compact city in Jenks's sight (2009,) is about the physical dimension of the city itself. On the other hand, the abstract in terms of increasing the density, focusing on mixed use and achieving social and economic diversity and vitality are also the characteristic of a 'compact city'[8] which leads to a sustainable city. This concept focuses on a house as the center of dwelling and provides necessary facilities in the possible distance to travel in everyday life.

From those theories above to identify one place and community, this paper focuses on these concepts and use them as a lens to look through a city between layers in the frame of 'geographical', 'activities', and 'meaning'. Defining the boundary of the place should not use only physical elements which only 2 dimension, but it should be compiled with the other dimension to understand the 'sense' of the place as well. Showa-Dori in Kichijoji was the first preference that chosen to be that case because of the variety of activities from a very strong sense of commercial to a very strong sense of residential but unidentified the boundary between them.

3. Methodologies

This research tries to define the boundary on the 'SENSE' of the place which is obviously non-measurable by introducing 2 new methodologies. The main idea is to evaluate each other. The experimental research had been done on Showa-Dori street which is rarely defined the boundary or the edge between one activity to another activity in the first part, then applied to the other parts around Kichijoji station on the second part by following methods;

'Soundscape'

A VDO recording during observation brings more understandable on defining the sense of place with its sound. The VDO took on a week day during 13:00 – 15:00 along Showa-Dori. The distance is about 500 m., which is walkable distance in 5 minutes (the distance is standardized for a neighborhood area, based on the center of each neighborhood[9].

The research took the VDO in the same speed along the distance and used the recorded sound on film to make a sound wave graph on a software and see the sound energy curved along the street, then projected the sound energy curve with the plan. The output shows density of activities and the sound energy curve matched with land use along the direction.

'De-Layering and Re-Layering'

This methodology uses photos capturing every 10 m. distance (this paper shows only 4 photos in an area) and categorizes each photo by de-layering typical elements layer by layer. This research uses 5 elements, which are street, signage and belonging, greenery, void, and people. After finished the de-layering process, then re-layering each element back together again and see the pixel percentage and color intensity. The pixel percentage (of the total pixels calculation only in 1 photo area) of each element represents activities and the sense of place, the intensity of the color represent the intensity of each element.

4. Discussion

'First part; Showa-Dori'

The thickness of the graph shows the dense of frequency and sound energy. The thinnest graph represents the longest distance on the residential area with less intense of activity. The medium thickness and small slope curve are in the commercidential [10] area which is mixed use (residential, small commercial and other usage) and the thickest one is in the commercial area with the high density and intensity of activities.

The 'De-Layering and Re-layering' method shows an interesting result. In the residential area, pixel numbers of every element is small except the very high percentage of greenery (42.3%). The greenery is used in order to protect the privacy but in the commercial area, the purpose of usage is opposite. The result represents the different function of greenery and belongings, in the commercial area. They're used to attract the public (belongings 26.5%, greenery 21%). On the other hand, they are also used to avoid public not to harass the residential area within the same street. These all related to the mass movement of the people. There is an extremely different between percentage of people in commercial and residential area following the usage of those local elements.

'Second part; around Kichijoji station'

The experiment was successful in the first part on Showa-Dori. Next phase is spreading out this methodology to wider area to improve the tool. The second part of this research was applied with additional factor which is 'timing'.

'Timing' is the most important factor of this fieldwork because Kichijoji got various activities. It is not only well known as a peaceful residential area, but also the place for spending leisure time with shopping, hanging out, and resting. The intensity of each activity depends on timing in a day. According to Japanese society, the most effective factor of commuting behavior is the train daily operating schedule. Working hours, commercial hours and daytime activities are also depended on the train schedule. Figure 4 shows the average capacity of commuting people and soundscape in 4 different periods of time in a day. The intensity of those activities affected by the opening hours of rail system and department stores. Most of the result is obvious through the mapping figure, except one interesting element.

5. Conclusion

The result of this experimental research comes to positive way. By using the soundscape to define the boundary or the edge of the place, especially trying to define the sense of the place on unphysical element, is possible to do.

However, this is only the beginning stage of using this method. It needs to be developed to get more précised result. On the other hand, seasoning should be considered as one of most effective factors, then the sense of place could be defined more particular.

Bibliography

三猿舎, “English Walking Guide to Old-Historical Sights in Modern Tokyo,” Tokyo: Natsume, 2008, pp. 185.

Rossetti International (2011, February, 14). Kichijoji. Available: http://tokyo-tokyo.com/Kichijoji.htm

E. Relph, “Place and Placelessness,” 3rd ed. London: Pion Limited, 1986, pp. 6.

Ibid. pp 45.

Ibid. pp 90.

P. Sanoamuang and D. Rodovic. “Introduction of new technologies and the identity of place: Tokyo and its railway line”. ISUF2011,, Montreal: Concordia University, 2011.

G.Delanty “Community: Key Ideas”. London: Routledge Taylor & Francis Group, 2003., pp 191.

D.Radovic (edited). “ECO-URBANITY towards well-mannered built environments”. Oxon: Routledge. 2009. pp 63.

R. Rogers and A. Power. “Cities for small country”. London; Faber and Faber Ltd., 2000.

Y.Tsukamoto, “Escaping the Spiral of Intolerance: Fourth-Generation Houses and Void Metabolism,” Tokyo Metabolizing. Tokyo: TOTO Publishing (TOTO LTD.), July 2010. pp.36

Musashino City Government. “Musashino-shi Toshi Masutaauran”. Tokyo, 2000. pp.13.

NTT Resonant Inc. (2011, June 29). 古地図 - goo 地図. Available: http://map.goo.ne.jp/history/index.html

KAIHATSUYOSOKU (2011, June, 29). Blog de Kichijoji. Available: http://kichijoji.kaihatsuyosoku.com/2011_04_01_archive.html

NTT Resonant Inc. (2011, June 29). 古地図 - goo 地図. Available: http://map.goo.ne.jp/history/index.html

Fig 1 VDO recording on soundscape and De-layering/ Re-layering Project

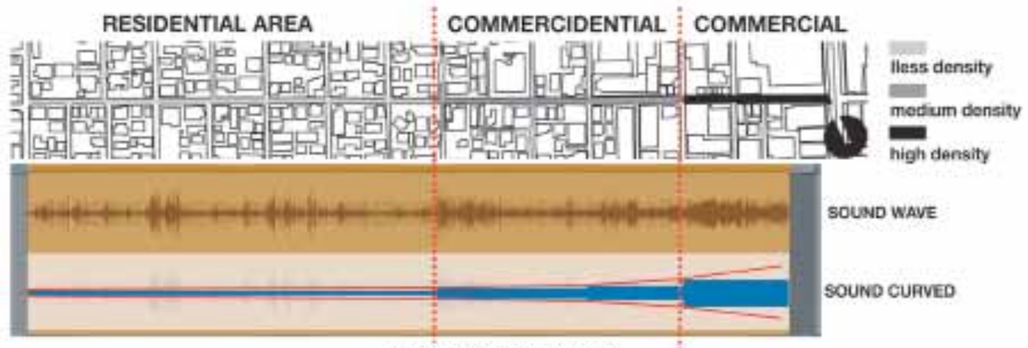
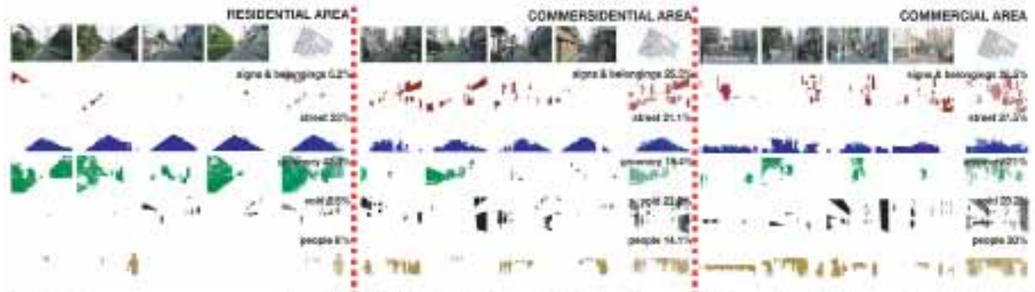


Fig 2 Soundscape mapping



area (typology) \ elements (%)	Belonging	Street	Green	Void	People
Residential	6.2	23	42.3	6.5	8
Commercidential	26.3	21.1	18.4	23.2	14.1
Commercial	26.5	27.5	21	29.2	30

Fig 3 De-layering and Re-layering mapping

Fig 4 People flow capacity during a day

Marichela Sepe
University of Naples Federico II

Introduction: Transforming South Broadway. Reinterpreting the place identity with PlaceMaker method

Broadway is one of the major thoroughfares of downtown Los Angeles which runs from Mission Road (North Broadway) and merges into Main Street, before the San Diego Freeway (South Broadway), which are interested by an increasing process of transformation. One of the oldest streets in the city, Broadway was laid out by Edward Ord under the plan of 1849, whose original name was Fort Street, stretching from south of Fort Moore Hill to Sand Street. In 1890, the name of the street between First Street and Ten Street was changed to Broadway - today South Broadway - while the section from First Street to California Street became North Broadway.
During the first half of the twentieth century, Broadway was deemed the main commercial street in Los Angeles and one of the first districts of theatres, where people went to see movies or shop in department stores. Between 1920 and 1930 many large buildings were erected, which are now listed in the National Register of Historic Places. The original use of many buildings was as department stores or residences, or, as in the case of the Bradbury Building, for film locations. After the Second World War, with the rise of multiscreen cinemas and shopping malls, as well as the financial district moving south-east of downtown LA, a slow decline in the thoroughfare set in, losing its place identity. Contributory factors were the closure of nearly all the theatres and the department stores (LA Conservancy 2012; Donofrio, 2010; Fuller-Seeley, 2008). (FIG1)

The study of this thoroughfare was carried out using PlaceMaker method (tab.1) - created in the context of a broader research project under an agreement between the Italian National Research Council (CNR) and the Urban Design and Planning Department of the University of Naples Federico II and for specific CNR projects - which is a method which allows to both identify the urban identity and suitable project interventions aimed at enhancing and reinterpreting the place identity facing the new needs.
The PlaceMaker method was conceived in 2001 and has been regularly updated during its pilot implementation phases that started in 2002. The main users for whom the method and the complex maps are designed are urban planners and urban developers, while a simplified form of the complex map is for use by local citizens, place users and visitors. This method has been implemented in urban sites in Europe, Usa and Japan. (Sepe, 2006).
Particularly, a series of experiments were carried out in pedestrian or semi-pedestrian thoroughfares in some major European cities, such as: the Kurfustendamm in Berlin, Oxford Street in London; the Esplanade area in Helsinki and the Ramblas in Barcelona (Sepe, 2009), where the process of globalization has already started and the effects on place identity may be observed. These case studies are located in areas which are dimensionally and geographically quite different, but share a central position and proximity to the historical centre of the city and represent symbolic places for citizens, tourists and users in general. In order to study the urban identity of sites and identify new elements and places, the areas selected are mostly of historical importance and at all events highly representative of the city and of its transformations, alterations and redesign themes.
As regards the Broadway experiment, the area involved is the section between 3rd Street and Olympic Boulevard, about 2.5km long (figg.1-3). The main results of the case study is to identify the identity resources and propose design interventions able to make re-emerge the historical tradition of this place reinterpreted following the new needs. The paper will illustrate two phases of design. (FIG 2, 3)

PHASE	OBJECTIVES	ACTIONS	PRODUCTS
0	Construction of the analysis grid	Choice of categories Choice of parameters Choice of significant days Choice of time slices	Database grid
1	Anticipatory analysis	Preliminary observations made prior to the first inspection of the place	Map of the preliminary ideas of the place
2	Perceptive and denominative description of the elements	Denominative survey	Map visualizing the results obtained from the survey
		Perceptive survey	
		Graphical survey	
		Photographic survey	
		Video survey	
3	Identification with traditional cartography of the elements required for area description	Analysis of traditional planimetry at urban scale	Map with the components of the site deduced from analysis of traditional maps
		Analysis of traditional planimetry at territorial scale	
4	Identification of place elements perceived by users of places	Questionnaire for visitors to the place	Map visualizing the results of the questionnaire
5	Processing the collected information	Overlay of the maps with the different elements observed from the anticipatory and effective analysis	Graphic system construction
		Check of the different elements observed from different analysis tools	Complex map of analysis
6	Identification of identity resources	identification of the identity potential identification of identity problems identification of identity qualities	Map of identity resources
7	Identification of identity resources by users of places	Questionnaire for visitors to the place	Map visualizing the results of the questionnaire
8	Identification of the project proposal	Overlay and elaboration of data collected	Graphic system construction
		Definition and localization of design intervention	Complex map of identity project

Tab. 1 PlaceMaker scheme

(FIG 4)

The identity resources of South Broadway
The identity resources of South Broadway were identified using the complex map of analysis (fig.4) drawn up with the PlaceMaker method, used as a basis to detect the resources available for the project (sixth phase).
This phase is realized through three measures. The first is the identification of the identity potential, namely of the elements of the complex map which characterize the area in question in order to recognize those which may assume a focal role in the project. Then there is the second action where the identity problems are highlighted. The activities are devoted to observing places in the complex map with the presence of unsustainable elements and annoying points of perception. The third action is the survey of identity qualities. The actions to be performed here involve noting places within the complex map of analysis with the presence of sustainable elements and points of pleasant perception.
In this case, several critical issues emerged which do not allow the perception of place identity in South Broadway or of its theatre culture. The retail trade, which constitutes a major element in the part of South Broadway under analysis, is in its current form at risk of lowering the quality of this place. The frames and signs of shops differ from one another and often cover not only the facades of theatres, but also those of historical buildings, almost hiding them from view. Furthermore, many shops do not have windows and the goods are displayed outside, creating a chaotic perception of the road.
Many retail outlets are vacant, creating a feeling of abandonment of the place sometimes combined with the poor state of maintenance of some buildings. This feeling is heightened by the striking contrast with parallel streets downtown where, from some points of Broadway, modern skyscrapers and well-maintained roads and buildings can be seen.
The state of abandonment is probably also perceived by some homeless who walk on the sidewalks. The retail trade is the dominant activity. Cultural activities, despite the historical spirit of place, are left to the only theatres still in use. The almost total dominance of retail businesses means the road is rarely lived after the closing of stores, increasing the perception of insecurity in the evening.
With regard to the road, the sidewalks are wide, but almost totally devoid of benches. The greenery consists of a few trees and some neglected plants which appear haphazardly inserted into the surroundings. The street furniture is discontinuous, as well as the maintenance of different road sections. The four-lane carriageway is very busy, and the lack of a green filter from trees contributes to the noise of vehicles spreading to the sidewalks.
As regards the identity potentials, the section of South Broadway in question has considerable potential, first as regards the early twentieth century architecture of its buildings ranging from Art Nouveau to the various forms of Revival style. The architectural and sculptural details of different buildings often go unnoticed due to the above issues in relation to identity problems. Similarly, the theatres, some of which have facades which seem designed to dominate the cityscape, almost all with interiors of architectural and artistic interest, in several cases do not appear well-maintained, or perform business functions which hide the architecture. Even the signs which are an integral part of the theatres - hence of the cityscape - are often confused or replaced by shop signs.
While trade is very much present, partly with the sale of low-cost products, there are few global chain stores in Broadway except for some fast food outlets, mostly situated in a large parking lot. This represents huge potential for this place because it continues to maintain its own character when it comes to history. In addition, the Hispanic population who have “settled” in this place, albeit in ways that often create visual chaos, has enriched the street with colours that suit the architectural context, maintaining an atmosphere of liveliness on Broadway. There is also the scenic mural in the section between the Third and Fourth Street entitled “Calle de la Eternidad” which is of artistic interest but underexploited as a cultural landmark.
As regards the thoroughfare itself, the presence of wide sidewalks, though often poorly maintained, is an invitation to experience the street on foot. The presence of historic sections of paving, such as those in front of the Eastern Columbia, the Los Angeles Theatre and Clifton’s Cafeteria, is also somewhat could also be better highlighted.
Finally, with respect to identity qualities, one of the first qualities is the distinctiveness of Broadway which entirely differs from other roads downtown and has maintained its historical character. The curtain of the buildings along Broadway has no ultra-modern skyscrapers. Despite the varied height and architectural style of its buildings, it has maintained the overall continuity in the cityscape. The presence of two theatres in use, and the use for film locations of two of the buildings with the most historical and artistic value in Broadway - the Bradbury Building and the Eastern Columbia - constitute elements of importance for site quality. There is also the historic Grand Central Market, with food for all tastes which attracts, with its architecture and its variety of products from all over the world, a large number of people. Another historical store with quality products is the Clifton Cafeteria and the Cutlery store.
On the stretch of Broadway between Third and Fourth Street on the left-hand side there is a small urban park recently built to honour Biddy Mason, which, besides having commemorative value, is a place for many to enjoy breaks and free time. Also from this first section the mural representing Anthony Quinn when he received an Oscar for his portrayal of Zorba the Greek can be seen painted on the Victor Clothing Company building on the Third Street. The paving painted in the mural is the floor of the Bradbury Building, thus recalling a historic building. In addition to the visual impact of this mural and, whilst walking along Broadway, the visual image of the well-maintained Eastern Columbia building, several other senses are activated by the taste and smell of the products in the Central Market and Clifton’s Cafeteria. Finally, the pace is generally moderate, allowing pedestrians to walk calmly, without the hectic pace found in business-oriented areas.

The project interventions
The project intervention (eight phase) were identified through the overlay of data collected during the previous design phases of PlaceMaker method and identification of the project proposals. In this phase we identify the places around which the project hypothesis to be conducted to enhance the identity resources are focused and the relative interventions. The product of this phase is the construction of the complex map for the identity project (fig.5). This map is the last step in the planning process, where the information contained in the complex map of analysis, after being filtered and transformed into resources, gives rise to proposals for the construction and enhancement of a sustainable place identity.
The interventions for Broadway which emerged in the design phases of PlaceMaker concern: improving the street quality; recovering the historical and cultural heritage; enhancing elements of historical, cultural and identity value; differentiating activities; introducing entertainment; improving urban green spaces; virtualizing the path. Each intervention envisages different actions.
The main objective is to enhance the place identity of Broadway, recovering its historic culture while introducing some new elements of the Hispanic culture. With its traditions this culture is protecting Broadway from possible globalized markets which could diminish the peculiarities and specific attraction of this thoroughfare.
The first intervention is to improve street quality. This intervention primarily translates into creating small public spaces within the path. Even though all five operations are devoted to creating a street with place identity, the first aim is to create small spaces containing sculptures, designed green spaces, benches, specifically recalling the history of the theatre and all historical cultural activities on Broadway. These spaces can be built using the street itself, small parts of open parking lots, unused spaces between buildings and so on.
The second operation is to widen the section used by pedestrians and use some of the four-lane roadway to create a cycle lane. The whole street section is quite wide and would allows the sidewalks to be widened. This operation would improve the possibility of inserting good quality urban furniture and would result in higher pedestrian flows to the street.
The third operation, strictly related to the previous one is to create a single project for lighting and seating. These aspects include different results: light is an important tool both to highlight points of interests (such as theatres and historic buildings) and illuminate the street during the dark, improving attractiveness and security. Seating is necessary both to allow a break during the itinerary and admire buildings, people-watch and in general appreciate the street scene. This should be combined with good quality paving, which suitably matches existing historic or artistic paving and allows easy walking (fourth intervention).
The last “improving” intervention concerns shop windows, many of which have to be created ex novo. Indeed, the lack of shop windows in many retail outlets means that goods cannot be suitably displayed: They are often relegated to improvised stands which result in both chaotic visual perception and difficult walkability. The shop windows and a single design for signs and frames which do not cover the buildings would improve street quality and the sale of goods.

Marichela Sepe
University of Naples Federico II

The second intervention is to recover the historic and cultural heritage. In this regard, the first operation is Recovering the historical theatres in disuse. As observed in the various phases of analysis and design of PlaceMaker, the Broadway Theatres have still a strong historical, cultural and identity value. Different reasons caused their decline, but collective memory of this place has persisted, both with respect to the theatres which are still used for performances and those in disuse or used for retail. In strict connection with this action, there is that related to the recovery of historic buildings. There are various buildings in Broadway of architectural and identity value. The recovery of less famous historic buildings also needs to be carried out. With their Art Nouveau or various forms of Revival style, these strongly contribute to the particular urban character of this street.
The third action is to recover the murals. Beyond the more famous murals representing Anthony Quinn on the Victor Clothing Company building on Third Street and the scenic mural on the stretch between Third and Fourth Street entitled "Calle de la Eternidad mural" - both of artistic interest - there are also others, on side building facades, representing advertising products or other kinds of signs. Albeit less impressive, such murals testify to the history of the place and could be profitably restored. (FIG 5)

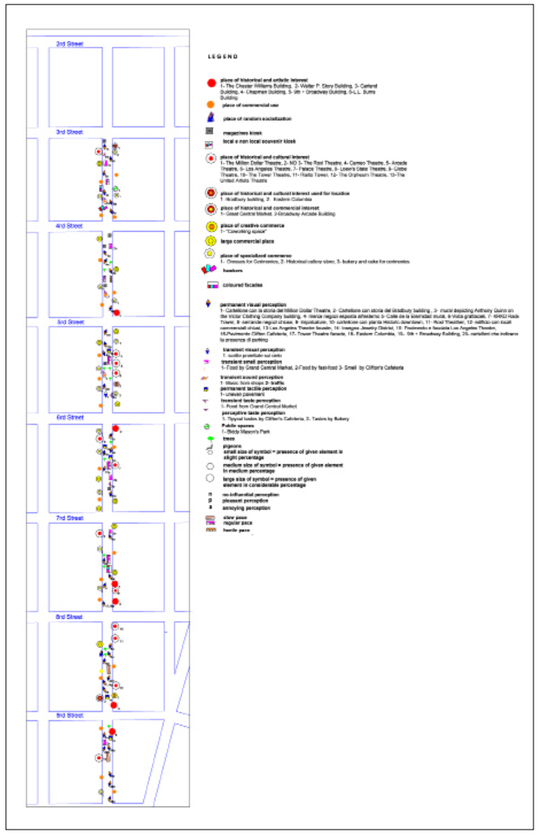
The fourth action is to restore the old theatre building and shop signs. The latter form part of the history of Broadway to the same extent as theatres and buildings. Suitable recovery of the old signs would contribute to the roots of identity in this place.
The third intervention is to enhance elements of historical, cultural and identity value. In continuity with the second intervention - recovering the historical and cultural heritage - the first action is to enhance the historic theatres in disuse as well as those in use. Programmed maintenance has to be carried out so that the theatres are not slowly forgotten. At the same time, again in continuity with recovering the historical and cultural heritage, enhancement of Broadway will necessarily include programmed maintenance of historic buildings, both of the most famous such as the Eastern Columbia or the Bradbury building – already in a good state of maintenance – and the others, most of them hidden by chaotic shop signs or in a state of abandonment. The third action is to exploit - through suitable urban furniture - the visual perception of murals of historic or artistic interest. The main murals are those representing Anthony Quinn on the Victor Clothing Company building on Third Street and the more recent mural on the stretch between Third and Fourth Street entitled "Calle de la Eternidad mural".
The fourth action is to enhance the historic pavements, such as those in front of the Eastern Columbia, the Los Angeles Theatre and Clifton's Cafeteria, which are of artistic interest. The new design of the street cannot fail to take account of these historically paved areas. They should be included in the design which will improve the overall image of Broadway. The fifth action is to enhance colours. This means enhancing the bright colours of the Hispanic culture, which has become part of the identity of Broadway and which may be observed in many street details, including shop windows and signs. The bright colours are part of the present place identity and have to be enhanced, using them to design the street more innovatively and more harmoniously. The sixth action is to enhance the creative activities of the place. Beyond enhancing the historic theatres and buildings, it is important to foster suitable activities which will be hosted inside them. These should include creative activitities – meant in its broader meaning - which are the most related to this place, namely the use of theatres for entertainment and the use of buildings for museums.
The fourth intervention is to differentiate activities. The present use of Broadway in many stretches is characterized by the sale of generic goods with no local interest, some of them of low quality. The only shops which sell quality products, such as the historic cafeteria and cutlery store, are practically hidden by the majority of generic retail outlets. In accordance with the peculiarity of Broadway, new shops would be inserted, also using currently closed structures, including film set materials, books about actors and directors, and so on. Furthermore, new cultural activities, beyond those of theatrical performances, have to be inserted. These could include the history of the cinema and theatre exhibitions, and experimental forms of performances.
The fifth intervention is to introduce entertainment. Entertainment is an element which, if suitably inserted, could contribute to the enhancement of theatres and the (re)activation of cultural activities. Accordingly, entertainment and performances by street artists should be in strict connection with street re-design and the re-use of theatres and historic buildings in order to create a more lively place with sustainable place identity.
The sixth intervention is to improve urban greenery. The new design envisaged for Broadway should include the insertion of trees and plants, improving those which already exist. Such improvements would have various positive effects, including the liveability of the place and the creation of a sort of green filter from transport smog and noise. Attention is required as regards choosing the trees species in order to both not to hide the theatres and buildings, and to ensure green treetops for most of the year.
The seventh intervention is to virtualize the path. Broadway is a thoroughfare with an evolving place identity. Even though this is related to its history and culture mainly connected to its theatres and historic buildings, new cultural uses would be added in order for its overall image to be improved. The possibility of virtualizing the path by creating multimedia guides in order to foster a wider range of users and visitors who could create their own paths would contribute to the recovery and re-use of this place.

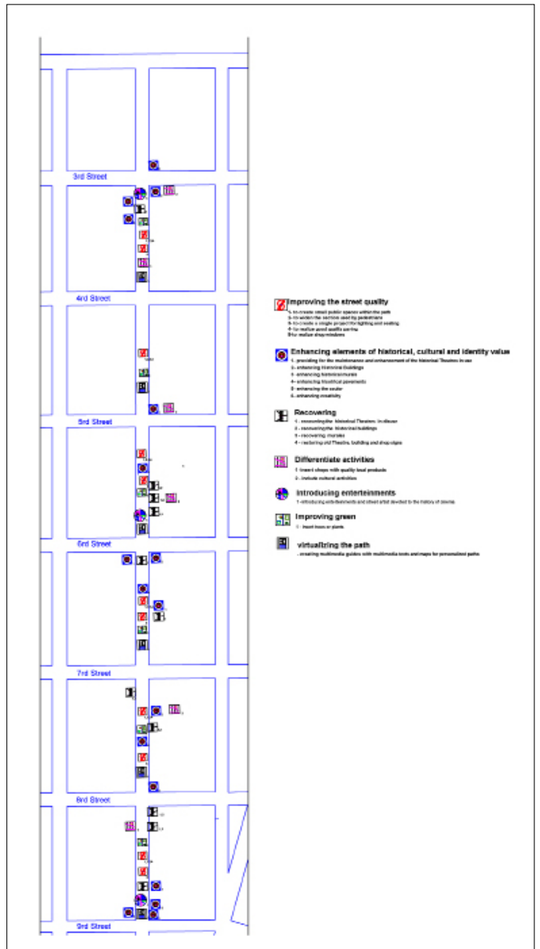
Conclusion

This paper presented a case study carried out in South Broadway, an important street in Los Angeles interested by an increasing process of transformation, using the PlaceMaker method.
This experiment shows that the interest in this place lies precisely in its history – related to its theatres and use for film locations – and, from some angles, in the new colours and music introduced by the Hispanics who work there. Indeed, almost all the interviewees wanted cinemas brought back to Broadway by renovating the old theatres, and the historical buildings restored and enhanced. Further, in response to the question concerning the symbol of Broadway, almost all mentioned the theatres or historical buildings in general: most of the interviewees wanted museums or in general cultural functions in the historical buildings, with the theatres staging cultural events not necessarily connected to the cinema. Several urban and architectural details such as the historical signs, the murals, the historical pavements, if appropriately included in a new design, could enhance the overall beauty of this street, encouraging roots to be established among both locals and tourists. The central position within Downtown Los Angeles and hence the proximity to various LA landmarks represents an important factor which would ensure – should Broadway be regenerated - greater use of the street by Angelinos and visitors alike. Furthermore, the quiet pace found along this stretch of Broadway is another element to enhance. The street's considerable width would allow suitable re-design to reduce the width of the roadway and widen the walkways, inserting a cycle lane for good measure. Accordingly, a series of interventions are proposed, namely improving street quality, recovering the historical and cultural heritage, enhancing elements of historical, cultural and identity value, differentiating activities, introducing entertainment, improving green spaces, and virtualizing the itinerary. Each of these interventions envisages different actions to enhance the historical memory of the street and the positive aspects of its present use. New public spaces need to be designed, and buildings and shops re-used, following the leitmotif of the history of the cinema.

References

Appleyard, D. *Livable Streets*, University of California Press, Berkeley, 1981.
Donofrio, Mark Edward. "*Preserving the Neighborhood Theatres of William Harold Lee*." (Masters Thesis), University of Pennsylvania, Philadelphia, PA, 2010
Fuller-Seeley, K.H. *Hollywood in the Neighborhood: Historical Case Studies of Local Moviegoing Berkeley*, CA: University of California Press, 2008.
Butina Watson G., Bentley I., *Identity by design*. Architectural Press, Oxford, 2007.
Carmona M., Heath T., Oc T., Tiesdell S. *Public places-Urban spaces*. Architectural Press, Oxford, 2003.
Christensen K.S. *Cities and Complexity*. Sage Publications, Thousand Oaks, CA.1999.
Lynch K. *The image of the city*. MIT Press, Cambridge MA ,1960.
Sepe M. (2009) *PlaceMaker method: planning walkability by mapping place identity.* Journal of Urban Design, 14 No.4, 463-487.
Sepe M. (2006) PlaceMaker: *Supporting sustainable urban planning*. Planning Practice and Research, 21 No.3, 349-366.
www.laconservancy.org





Legenda

Fig.1 South Broadway, perspective with the Orpheum theatre, the Easter Columbia Building and the United Artist Theatre

Fig. 2 South Broadway, perspective of the Rialto theatre

Fig. 3 South Broadway, perspective of the Globe theatre

Fig. 4 Broadway, Complex map of analysis

Fig. 5 Broadway, Complex map of design

Raffaella Simonelli - Mariacristina Giambruno
Politecnico di Milano, Italy

Managing transformations in historic urban cores between conserving and developing. A case study

Interventions in historic urban cores have long been a debated subject throughout the years: how managing the necessary transformations? Is it possible to come up with guidelines at an urban planning level, which take into consideration the values engrained in the past, while at the same time to guarantee coherent development in our cities? How arriving to conjugate conservation and transformation/adaptation of the existing city, while respecting the identity of the place in every form and manner?
The common planning and management intervention practice in existent edifications tend to normalize in a rigid and imposed way any acts that would be done, referring only some variables that compose it, endorsing its complexity and giving arbitrary and suggestive readings interpretations, to give definitive answers to many cases.

The existent city is a complex organism, composed not only by monuments but also by historic buildings and by the widespread network of relationships that bind them indissolubly. Historic, social and physical connections make a city like a mirror that reflexes its population. Through the historic structure we can read and understand the identity of any place, its culture, its people and the everyday stories.
The relationships network is composed by houses, representative monuments of power, roads, squares and way the people live. We can see the identity of a city not only in the urban spaces, but also in the matter of the places are made of; matter that bears and sees the historical and the actual events.
The history of a city is made of “harmony” and “disharmony” and however records the people living there in every material signs. The build construction, the techniques and the constituents are part of this story, as well as the intangible heritage that permeates it. The existent city, extension of the obsolete and restrictive concept of historic center, is an exceptional diachronic example: every time left its mark, sometimes in continuity, other time in discontinuity with tradition.

For this reasons it’s extremely difficult to standardize the transformation process of a complex system like a city, restricting it to some plans that simplify the reality.
We have to understand that the city is a complex and stratified phenomenon, not reducible to a simply object without losing, forgetting and hiding infinite variables that arrange it. To be respectful whit its complexity doesn’t mean to refuse to act on urban structures, but simply means acting whit a “strategic procedure”, a sort of open project that could guide the intervention without defining, at the beginning, the complete project.
Our action will keep the complexity of the object and all its potential and divergent readings, redesigning at each step the cognitive process undertaken and planned, so as to relate and interact with the object and modify our opinions. We don’t reduce the complexity of existing building but we have to respect all the signs that men and time imprinted on it in order to ensure the transmission to the future, believing that permanence and mutation should be a combination and not a dichotomy.
Acting strategy does not mean, however, the arising in a no opinions relationship, but a connection to the object aware of its cultural history and the use of our knowledge and expectations, not as the truth, but only as our point of view.

Designing for the existing city means, however, to understand the grasp of the nuances, the wealth, the discontinuities, widening our vision and refusing the personal pre-conceptions. All of this with respect, as John Ruskin would say, to the signs that people left before us.
In this way we can say that the evidences of the past become resources for the project and no tie for the future.
To determinate a strategy is necessary to know the single things and the complex reality, changing the course in benefit to the specific phenomenon and its evolution over the time.
In this direction the question only could be dealt imposing a minimum quality standards which the plan would respect. A sort of “preliminary notes” that will be provided to the designer, as well as to his clients, a range of knowledge to understand the complexity of the city, as a stratigraphy of past and present. Therefore they could enjoy, preserve or deny it. Not as a rigid grid, but a series of proposals into which the actors - contractors, designers and users – will act.

It will be necessary to search a new field of work for the plan and for the project, so that the first is not the erasing of the second, denying the analysis of the individual objects that compose the city and refuse the opportunity of interdisciplinary contributions.
The plan should change its guidelines in relation to all the interactions between the territory and the city and between the city and the individual components.
It should not exist, therefore, a rule that ensures the outcome of the project on a particular building, but we have to generate strategic general lines that let us know how to change the analytic tools used in every singular situation, having the respect and the preservation of palimpsest-city as the basis. However we have to know that each reading key contains itself a form of selection and, for this reason, it should not only be the only one matrix of the project.

Finally, considering that the same users modify the city, it will be necessary to operate on them by increasing their level of knowledge, in order to diffuse the ability to understand and, therefore, to respect the complexity of the urban structure, to transmit coherence and specificity to the future.
This is a presentation of a research which has been aimed at formulating a management strategy for interventions within the urban centre. The adopted approach takes cognizance of the complex nature of existing fabrics through the knowledge of building elements, evolutionary processes, transformations carried out, to create a strategy capable of withholding the survival of all the present components and their development through time. Taking into consideration the reality behind every singular issue, it is possible to arrive to adequate conclusions as answers to the existing problems, which respect the whole as a sum of its parts. This respect does not suppose the intangibility, but it’s aimed to guarantee flexibility and continuous upgradeability of the project, principles denied by that normative practice that controls the process of urban transformation with definitive tools and rigid plans.

The aim at this stage is not to state the conclusions, but to outline the project procedures, through formulated guidelines, for carrying out interventions within the city: the formulation of qualitative measures which the designer has to respect, while shall be given the freedom to establish the modality which he intends to adopt. The objective is therefore to elaborate a manner to manage the infinite variables of a complex reality, but which retains flexibility and adaptability to any particular issues which emerge or may emerge through time, thus ensuring an effective application of normative measures.
Intervention formulations can only appear from an objective knowledge of the reality where it operates and the cognitive analysis can provide us a partial comprehension level, in relation to the particular moment and circumstances, because it’s not possible to forget time, that acts constantly and changes every element.

The object of investigation is to imagine a way in which the intervention should refer, that guarantees a respectful development to the historic material, to its unity and its stratigraphy.
The qualitative course which is identified is split in three levels of investigation, which correspond to the three different scales of intervention and subject matters.
The “first level” consists of obtaining general knowledge of the site and includes historical documentation (analysis and use of historical cartography, study of bibliographical and archive documents, all to understand and illustrate the territory evolution during the time) and analysis to identify functional characteristics, morphological aspects, material and pathological properties. Thus the information retrieved in this phase with datasheets, reproduced in thematic maps, will result in a central information database or archive, which will be used to establish any controls which may be immediately necessary.
The datasheet, specifically made for this investigation, can be easily actualized and represents the best way to reach a minimum level of knowledge; in this way it allows a complete and exhaustive view of all existent edifications.
The “second level” takes into consideration the problems emerged from the analysis undertaken at the previous level and it focused on the areas which have been identified as mostly damaged and which therefore require immediate attention and intervention. The new analysis, which implement the central information database, are: visual analysis of the exterior state of the building, inspection of the interiors (structural condition, usability of building etc), state of conservation and use of the open spaces.

Finally, the “third level” provides information for the compilation of intervention projects on singular buildings and open spaces, outlining both the quality of the analytical procedures that the designer is obliged to respect and the quality of the actual intervention itself.
There are in fact multiple individual problems that could only be solved with a detailed study, which cannot be made at a planning level, but it is the responsibility of the actors who directly work on the heritage and give the possibility of a more detailed investigation.
It consists of imposing an analytical iter to the designer, so he can take into consideration the singular characteristics and intrinsic value of the objects and he can opt for coherent choices of a number of non categoric directives. In this way, the designer will be able to have an active role in the common objective of preserving the urban fabric and its stratifications, through the interpretation and the application of the guidelines, whilst guaranteeing development through time which adapts to what exists on site and any future exigencies. At the same time the central database will be amplified and enriched.
Such methodology has been verified through its application in a study case, the island of Ortigia, the historic center of Siracusa, Italy[1], which is an interesting urban palimpsest[2], subject to a series of measures which, from 1968, have addressed a lot of problems.

Further to the Regional Decree n. 290/68, which through Law 1497/39 declared Ortigia’s territory as being of “noteworthy public interest,” and further to designating it as area of high landscape value, in 1976 the Regione Sicilia passed a law (L70/76) entitled “Tutela dei centri storici e norme speciali per il quartiere Ortigia di Siracusa e per il centro storico di Agrigento,” which seems to have been tailor made in order to give the city of Siracusa an operational tool in order to be able to conserve its urban historic core, in the shortest timeframe possible.

Therein lies the concept that, together with issues raised in debates on historic urban cores[3], such areas are not only looked as cultural heritage assets, but also as a social and economic resource; the contents thereof contain guidelines on urban conservation areas, both general and specific to Siracusa’s historic core, amongst which the introduction of measures in the Piano Regolatore Generale of specific methods of financial contributions in order to establish a commission made up of experts to implement such a plan.

This plan, the Piano Particolareggiato[4], aims at revitalising Ortigia, analysing the functional deficiencies, proposing new designations and introducing the concept of graded scheduling.
Another interesting study deals with the structural problems encountered in seismic movements and identifies correct restoration methods, through a technical study and careful consideration of the materials involved, and also through a typological assessment of Ortigia’s housing stock and their development through time[5].
An additional, recent study deals with superficial deterioration of facades and outlines interventions for conservation, further to sample testing and analysis[6].
The above pursue provisions partially address the problems faced by the island of Ortigia; therein lies the need to safeguard the existing urban reality in its complexity, avoiding specific operations and hierarchies based on historical, aesthetic, formal values which depart from the reality and reduce the value attained throughout history.

The process has arrived at the analysis of the whole island of Ortigia, within the “first level” phase: buildings and spaces have been scanned in a brief period of time in order to highlight the problems and identify areas which need more detailed analysis.
One of the districts where the habitability conditions are severe, with degradation not only material but also social and economic, and where there are a lot of unused units is the Graziella, made of a very small and intricate buildings fabric, in which the full outweigh on the empty. There are also an urbanization primary decay, the absence of commercial activities, the extinction of the craft, the lack or absence of public services.
Through the phase of “second level” we did a full review on the state of public open spaces, on exterior and interior of all building units and properties, to obtain the necessary information for the plan.
The “third level” tried to develop a planning methodology to conserve as much as possible the whole city center, but at the same time to make it more usable, adjusting to the needs and to the contemporary lifestyles and equipping functions, compatible with the existing built.

Investigations on the designations, construction and structural aspects, with particular attention to the static instability and decay, on housing conditions and transformation processes of Graziella led the design process towards the formulation of quality guidelines, which make up the technical.
So we identified public open spaces, new public paths and the real state of conservation of the units required to the rules. These rules address two interrelated issues: the redevelopment of public spaces inside the district and the recovery of the buildings.

The enhancement of public spaces and paths is achieved by avoiding any type of demolition of buildings through the inclusion of new items of furniture, or upgrading lighting systems and eventual repaving, without altering the historicized perimeters; it is also provided the reuse of ruins, to be achieved through the creation of public green spaces where place lighting and seating and conservation of external walls, such as evidence of material culture.
But the only residential use isn’t able to revitalize the district, so we had to identify new functions, while respecting the heritage handed down to us. The decay may be, in this case, a resource for the development of Graziella: because it allows the reuse of large portions of buildings with different uses, without having to move the population; collapses of horizontal and vertical link structures allow a free internal distribution. Starting from the potential of the buildings, it was possible to propose the location of those absent services or cultural, tourist and commercial activities, to create a mixture of users, reducing the seclusion of the district and avoiding mono functionalization.

Detailed examination of the buildings made it possible to identify all those buildings and housing units that cannot be used continuously for residential purposes. The best way to reuse them is to allocate there temporary residences, such as tourism or university ones.

We also suggested to join different units to reach acceptable standards of today living. The creation of open spaces on the first floor, using abandoned buildings inside of the block or irreparably damaged by the collapse of the roof, allows not to sacrifice portions of buildings and provides improve the living conditions of surrounding units through the creation of openings on these spaces.
The legislation developed, detailed and flexible, allows better management of the plan and guide the designer in all phases of the work, without replace him.

In order to stimulate the active participation of the designers and the City, the designers must follow a defined process knowledge (whose functioning is ensured by the presentation of the minimum documentation required), as a preliminary step for the project, to become aware of the specific problems of reality. They also may propose interventions ad hoc for not present situation in the basic legislation.
Finally we tried to test the applicability of the rules in a ronco (a cul-de-sac), which presents decay and neglect: a conservation project capable of withholding the survival of all the present components and their development and adaptation to changing needs.

Bibliography

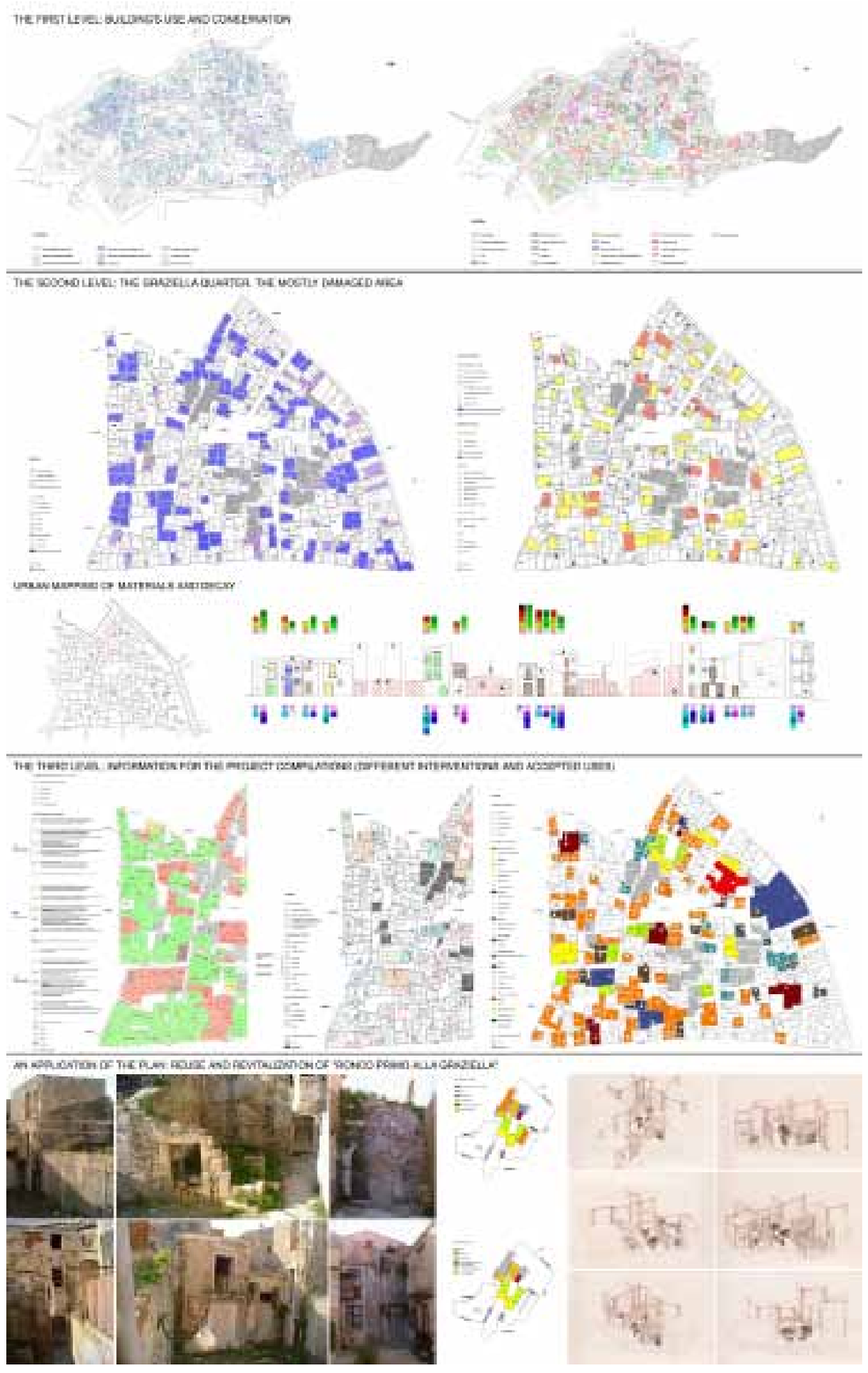
AA.VV, *Salvaguardia e risanamento dei centri storici*, in «Urbanistica», n. 32, 1960.
AA.VV., *La riqualificazione della città meridionale, Convegno straordinario ANCSA, Palermo, giugno 1989*, in «Quaderni di urbanistica informazioni», 1992, n.11.
Acerra L., Ortigia. *Vicende storiche ed evoluzione urbanistica*, Ediprint, Siracusa, s.d.
Buls C., *L'estetique des villes, Bruyllant-Christophe*, Van Oest, Bruxelles, 1893 (italian translation Pasolini M., *Estetica delle città* di Ch. Buls, Aacar, Roma, 1903).
Bellini A., *Istanze storiche e selezione nel restauro architettonico*, in «Restauro», n.68, 1983.
Bellini A., *A proposito di alcuni equivoci sulla conservazione*, in «Tema», n.1, 1996.
Bollati R., Bollati S., *Siracusa: genesi di una città –Tessuto urbano di Ortigia*, Falzea Editore, Roma, 1998.
Boriani M., *Dare una speranza al nostro passato: fiori blu dal fango della storia*, in M. Dezzi Bardeschi, F.Tartaglia, A-letheia. *Architetture dimenticate. Studi per il riuso*, Alinea, Firenze, 1991.
Borri D., *Piani Particolareggiati di recupero nei centri antichi: obiettivi, metodi e procedure*, Edizioni DI. PI. TER., Reggio Calabria, 1983.
Cannarozzo T., Siracusa: *Ortigia ha finalmente un piano. Chi lo gestirà?*, in «Urbanistica Informazioni», n.98, 1988.
Cannarozzo T., *Il recupero di Ortigia, centro storico di Siracusa,* in «Recuperare», n.39, 1989.
Cannarozzo T., *Dal recupero del patrimonio edilizio alla riqualificazione dei Centri Storici. Pensiero e azione dell'Associazione Nazionale dei Centri Storico-Artistici in Sicilia 1988-1998*, Publisicula, Palermo, 1999.
Cervellati P., *L'urbanistica dei centri storici: questioni economiche e sociali*, in «Italia Nostra», n. 124, 1975.
Dezzi Bardeschi M., *Centri storici, ultimo atto o comica finale?*, in «Restauro», n.41, 1979.
De Martino U., *Cento anni di dibattito sul problema dei centri storici*, In «Rassegna dell'Istituto di Architettura e Urbanistica di Roma», II, n. 4, 1966.
Dezzi Bardeschi M., *Considerazioni sul futuro del costruito urbano. Alla luce delle ultime proposte (e dimenticanze) legislative*, in «Restauro», n. 144, 1998.
Di Battista V., Fontana C., Polo G. (a cura di), *Città esistente e città futura. Innovare il recupero*, in «Atti X Congresso Nazionale ANCSA»- Bergamo 13/14 giugno 1986, Edizioni Bolis, Bergamo 1990.
Di Biase C., *Le ragioni del riuso*, in AA.VV., *Riuso e riqualificazione edilizia negli anni '80*, Franco Angeli Editore, Milano, 1981.
Di Biase C. (a cura di), *Nuova complessità e progetto per la città esistente*, Franco Angeli, Milano 1989.
Di Biase C., *30 anni ANCSA. 1960-1990*, Tipografia Cordani, Milano, 1990.
Di Stefano R., *Il recupero dei valori. Centri storici e monumenti. Limiti della conservazione e del restauro*, ESI, Napoli, 1979.
Di Stefano R., *I Piani di Recupero ed i problemi dell'intervento nei centri storici*, in «Restauro», n.41, 1979.
Gabrielli B., *Il recupero della città esistente: saggi 1968-1992*, Etas, Genova, 1993.
Gabaglio R. *La città tra permanenza e mutazione, Quaderno n. 20 del Dottorato in "Architettura, Urbanistica, Conservazione dei luoghi dell'abitare e del paesaggio"*, Politecnico di Milano, Clup Editore, Milano, 2008.
Giambruno M., *Verso la dimensione urbana della conservazione*, Alinea Editrice, Firenze, 2002.
Giambruno M. (a cura di), *Per una storia del Restauro Urbano - Piani, strumenti e progetti per i Centri storici*, Città Studi Edizioni di De Agostini Scuola, Novara, 2007.
Giovannoni G., *Vecchie città ed edilizia nuova, Utet, Torino,193*, II edizione a cura di Francesco Ventura, CittàStudi edizioni, Milano, 1995.
Giuliani A., *Monumenti, centri storici, ambiente*, Tamburini Editore, Milano, 1966.
Giuffrè A., *Sicurezza e conservazione dei centri storici. Il caso di Ortigia*, editori Laterza, Bari, 1993.
Muratori S., *Studi per una operante storia urbana di Venezia*, Istituto Poligrafico dello Stato, Roma, 1959.
Pagnano G., *Analisi e definizione generale del piano particolareggiato di Ortigia – prima parte*, in «Recuperare Edilizia Design Impianti», n. 39, 1989.
Pagnano G., *Recupero di Ortigia. Centro Storico di Siracusa - Analisi e definizione generale del Piano Particolareggiato di Ortigia - seconda parte*, in «Recuperare Edilizia Design Impianti», n. 40, 1989.
Pane R., *Città antiche, edilizia nuova*, Università degli studi, Facoltà di Architettura, Napoli 1957.
Ranellucci S., *Il restauro urbano. Teoria e prassi*, Utet, Torino 2003.
Sgandurra L., Simonelli R., *Dall'omologazione urbana alle strategie per la gestione della complessità del costruito*, in «Atti del XII Seminario e Premio internazionale di Architettura e Cultura Urbana, La Mostra», Camerino, Edizioni Artelito, 2002.
Simonelli R., *Il Codice di pratica per il restauro delle fronti esterne degli edifici di Ortigia (2001)*, in Giambruno M. (a cura di), *Per una storia del Restauro Urbano – Piani, strumenti e progetti per i Centri storici*, Città Studi Edizioni di De Agostini Scuola, Novara, 2007.
Sitte C., *L'arte di costruire la città. L'urbanistica secondo i suoi fondamenti artistici*, 1889, Jaca Book, Milano, 1980.
Tinè S. (a cura di), *Codice di pratica professionale per il restauro delle fronti esterne degli edifici. L'esperienza di Ortygia*, Dario Flaccovio Editore, Palermo, 2001.
Trigilia L., *La città in Sicilia. Degrado e problemi di conservazione*, ALINEA editrice, Firenze, 1993.
Vassallo E., *Centri antichi 1861-1974. Note sull'evoluzione del dibattito*, in «Restauro», n. 19, 1975.

Notes

[1] Early studies and insights on the situation of Ortigia and particularly on the protection measures designed for it date back to the degree thesis entitled "Ortigia: strategie per la gestione della complessità urbana" discussed in 2001 at the Politecnico di Milano, supervisor prof. Maurizio Boriani, tutor prof. Mariacristina Giambruno, authors Lucia Sgandurra and Raffaella Simonelli.
[2] The island of Ortigia is the city of Syracuse until the Italian Unification, a city-fortress forced to grow up on itself, with consequent stratification processes that led to the creation of an exceptional monumental site, containing signs and traces of the evolution, made by different experiences of history, techniques and technologies. The charm of this urban environment has been accompanied, especially since the second half of the XXth century, by heavy conditions of homelessness: the increase of the height of the building volumes, due to the growth of superelevation, employment and the gradual privatization of alleys and courtyards, along with the small size of the roads, made precarious conditions of environmental comfort. So many people moved to the new city during the time, abandoning the old one. Today the situation is changed, due to the massive presence of foreigners who bought property in the city.
[3] See the act of conference ANCSA, 1970 in Di Biase C., 30 anni ANCSA. 1960-1990, Tipografia Cordani, Milano, s.d (1990).
[4] The Plan, elaborated by G. Pagnano, was adopted in 1988. It is composed by conspicuous and accurate analysis on the existing, to which do not always follow equally attentive directions for action to the specificity of each object, with "worrying" and simplifying outcomes when it becomes operating.
[5] This study is carried out by A. Giuffrè (Sicurezza e conservazione dei centri storici. Il caso di Ortigia, editori Laterza, Bari, 1993).
[6] This study of S. Tinè (Codice di pratica professionale per il restauro delle fronti esterne degli edifici. L'esperienza di Ortygia, Dario Flaccovio Editore, Palermo, 2001) is carried out in conjunction with CNR.

Image

The "first level" analysis, the "second level" analysis and the "third level" for the compilation of intervention projects on singular buildings and open spaces.



Benedetta Stoppioni
Università degli Studi di Bologna, Italy

Duisburg 1945: Stunde Null

Across what distances in time do the elective affinities and correspondences connect? How is it that one perceives oneself in another human being, or, if not oneself, then one's own precursor?[...] No matter how often I tell myself that chance happenings of this kind occur far more often than we suspect, since we all move, one after the other, along the same roads mapped out for us by our origins and our hopes, my rational mind is nonetheless unable to lay the ghosts of repetition that haunt me with ever greater frequency.
(W. G. Sebald, "The Rings of Saturn")

The Second World War left a mark in the history of Duisburg. At the end of war only the 3% of habitations were undamaged, city's streets were deluged with 5 millions cubic meters of rubble and the number of inhabitants had dropped between 1940 and 1945 from 432.000 to 150.000, above them 25.000 were killed at the front. Lack of housing, raw materials and primary means of survival were the background for starting the rebuilding of the city.
Duisburg had a destiny common to that of a large number of German cities, especially to those centers located in the Ruhr area, that were subjected, more than other, to the bombing of the Royal Air Force because of their proximity to the United Kingdom, but mostly because they were the driving force of German war industry.

The post war reconstruction completely disfigured the face of the city. From 1948 - and the twenty years following - many plans were drawn up, which in different ways aimed to reconfigure the city on basic criteria related to the enhancement of vehicular traffic and the transformation of the historic center in a city for business and trade and inevitably the residential function was moved away from it.

The impetus toward this kind of planning was a connotation of the postwar years and can be seen in the wake of the efforts of the German people to rise up after the war catastrophe, seeking in *Wirtschaftswunder* [economic miracle] an instrument – almost apotropaic - of redemption from a shameful past, that had to be silent, forgotten, left behind.

The Allied victory over Nazi Germany meant for a large number of Germans the end of a system of thought in which they somehow managed to identify themselves. The discovery of the crimes of the Reich corresponded to an ideological vacuum. As a consequence a voice which could direct the debate about the relation with the recent past, the urgent necessity of the present and plans for the future was sought. Being linked to the great German tradition, the poet and the writer - ultimate protector of language, art and culture - became recognized as the only possible spiritual *Führer*. The intellectuals enthusiastically decided to fulfill this role in the conviction of living an epoch of change that would lead to a complete cultural, political and social renovation; they would have been the active promoters. Germany was a blank slate to be rewritten. Soon however, the reality shattered these dreams: the monetary reform, the establishment of two German states and the Cold War left intellectuals again *Draußen vor der Tür*.[1] They gave up from political and social debate and they took refuge in their inwardness, where Germans had always been able to express their genuine demands for freedom. No more *Stunde Null*. The day's program claimed for a return to humanist cultural tradition, to thinkers and great ideas of the past: humanity, truth, justice, freedom, love ... Humanism was supposed to offer a definitive cure for the "disease" of National Socialism.

In the immediate years after 1945, the architecture was once again seen as Mies had described it in 1923: "the will of an epoch conceived in spatial terms ... vital, changeable, new. Neither the past, nor the future, only the present is malleable. Things takes shape in this way of building, only".[2]
Germany looked on the direction of this Architecture: latching on to Modern years of the Weimar Republic meant to delete the twelve years of Nazi barbarism, as well as declaring itself a democratic nation.
As a Democratic Nation the Country presented itself at the first universal exposition that took place in Brussels in 1958. The German pavilion was a transparent steel and glass structure, a classic-modern building, whose architectural reference was definitely Mies. It did not represent the architectural reality of the country - still characterized by strong traditional and regional tones - instead it represented the compromise. After years of debate on the reconstruction, that kind of architecture seemed to be the only possible way in which Germany could present itself to the World. That Architecture alluded to the glorious modern democratic tradition; ignoring the aversion inherited from the German Federal Republic towards "Bolshevik" architecture of the Bauhaus. It whispered the history of a country that had canceled its recent past in order to return to the golden age of Weimar; however it omitted that this Neues Bauen had little to do with the substance of the Modern twenties. Its architects were not the emigrants - the most famous didn't want to return to a homeland that they no longer felt theirs and from which they were not re-claimed – but rather its former pupils and colleagues.

For the most part these architects had not gone into exile: some of them had opted for the so-called "internal emigration", others humbly chose to work in public offices. During the regime, in the military-industrial construction sites and in the offices which developed plans for motorways of the Reich, a modern culture had effected. This led to a radical change compared to the radical precepts of the twenties. Hence the *Neues Bauen* of the architects of the reconstruction was connected to this Modern, rather than to that of the Masters. The continuity of their activity was a contradiction to the legend, in part fueled by themselves[3] about the reference to the years of Weimar. In reality, the Federal Republic was no more heir to Weimar, than *Nachkriegsmoderne* [the post-war Modern] was to the *Moderne*; but Germany of 1958 preferred to make believe this to itself and to other countries.

The new cities in whose heart towered the tall business buildings in glass and steel - on the American model, on *democratic model* – in whose streets ran cars, and in whose offices BDR was turned around... these cities were the embodiment of the reconstruction's spirit.
How often does this *Stadtbild* [image of the city] arise from post war impulses? Are new German cities truly daughters of the German economic miracle? Can we speak, at least in the urban field, about the year 1945 as a *Stunde Null*?
Or rather, must we seek the roots elsewhere? Isn't it true - citing Sebald – *we all move, one after the other, along the same roads mapped out for us by our origins and our hopes?*

The analysis of Duisburg case study can suggest some answers to these question.[4]
On April 12th 1945 American troops occupied the city, which passed then under British authority until 1949.
In the early postwar years, the occupation forces in Germany carried forward a program of Entnazifizierung [denazification] aiming to remove the members of the National Socialist Party, from their public offices; and also those who in various measure had been in favor. In the territories under the control of the British and French this operation was milder than that one of the American zone. This was perhaps one of the reasons why, in the city of Duisburg, the responsible for the *Stadtsplanungsamt* [planning department] Heinrich Bähr, was not relieved from his public office after 1945.

The story about Bähr is very particular and it's interesting mentioning it. After his studies in Düsseldorf and an apprenticeship in Austria at the studio Holzmeister[5], he moved to Duisburg in 1926. Just in the early years of his activity, he identified considerations on traffic and road system as the central issue of urban planning. He collaborated in the design of *Siedlung*, where he carried out the lessons learned in Vienna and seemed to appreciate *Neues Bauen* dictates. From 1935 he headed the Duisburg *Stadtsplanungsamt*, which was not so usual at that time for a supporter of modern architecture.

His story corresponds to that one of the *Neues Bauen* in the years before and after 1945: as already mentioned, modern architecture continued on its way into Germany even following secondary roads. The same architects who perpetrated modern architecture on their homeland in the dark years of National Socialism were those who became spokesmen for it after the fall of the regime. The false myth of the rebirth of the Neues Bauen and its acclamation in the postwar years - denied by well-known events, as Schwippert case for the new parliament in Bonn, or the restoration of St. Paul's Church in Frankfurt, signed by Schwarz - seems to be reflected in the *Stadtsplanungsamt* events of Duisburg.

After 1945 Bähr, as an older spokesman for the *Moderne* had the credentials to perform his duties in public office undisturbed. In 1945 he drafted a reconstruction plan for the historical city's center, which involved the creation of a large north-south axis, which followed the ancient city walls course. The plan was however rejected by the Mayor Weitz. It seems that these very bad relations with the mayor led Bähr to an early retirement in 1947, although others assumed otherwise. His business activity in Stadtsplanungsamt before 1945 and the collaboration with *Arbeitsstab für Wiederaufbau* of Speer could be the cause of his retirement, for instance.[6] However, if so, does it not seem strange that his successor at the head office building was Johannes Babenzien, an architect who worked from 1939 to 1945 as city planner in Hamburg, the city where since 1937, Konstanty Gutschow, a key figure of the *Arbeitsstab für Wiederaufbau*, headed the urban planning field?

Why Babenzien and not Bähr? Perhaps Bähr was paradoxically too attached to the twenties' *Moderne*, while Babenzien was most trusted... or perhaps *implicated*? Babenzien would have allowed the strengthening of the relations network that had developed within the *Arbeitsstab*, ensuring Duisburg its exclusive prerogative in the reconstruction. If so – and is not too far fetched - the micro-history of Duisburg *Stadtsplanungsamt* would have developed in perfect harmony with the macro-German history.
In the same year Babenzien took assignment in Duisburg, Adenauer as counsel of the newly formed Federal Republic, he gave priority to the end of denazification and started its turnabout.[7]

The *Arbeitsstab* had significant influence in the history of postwar planning. In 1943, minister Speer, invited by Hitler, gathered around for him his Berlin collaboration team and colleagues from other cities and founded *Arbeitsstab für Wiederaufbauplanung zerstörter Städte* [Working Staff for Reconstruction Planning of Destroyed Cities]. Its core consisted of approximately 20 professionals, mostly from northern Germany. Despite the official leader of the group, Rudolf Wolters, its real soul was Konstanty Gutschow, who together with Speer and Giesler was among the most prominent figures in the Reich urban planning. Gutschow used the *Arbeitsstab* to create an extensive network of correspondents throughout the Reich. Hanns Dustmann, Ernst Neufert, Reinhold Niemeyer, Julius Schulte-Frohlinde, Hans Reichow, Hans and Friedrich Stepahn Tamms were other key figures.[8]

The group's activities was divided into several areas: the development of a uniform system of assessment war damage, the development of guidelines and standards for reconstruction, the study of housing prototypes, and the urban plans for 42 cities to be reconstructed.[9]
Arbeitsstab's attention was not directed to architectural detailed matters, but rather to the functional needs of the city, particularly related to traffic issues: the *Stadtbild* foreshadowed a sprawling city, based on a strong infrastructure networks. This vision was common in part also to the Neugestaltungpläne [reconfiguration plans] of some German cities promoted by Hitler in the early years of the regime.

In turn, if stripped of their monumental and celebratory rhetoric, these plans reveal similarities with the assumptions of the *Neues Bauen*, for example on the use of zoning and on the attention to viability issue. *Continuity into continuity*...
The myth of Speer, as the only "man" of Hitler, as the only "brain" of many projects has been recently reduced in importance. The architects of the Arbeitsstab - a laboratory where urban planners of reconstruction formed - and their mentor Gutschow, had been the real responsible for the Reich planning activity. They brought with them the skills acquired before into the postwar. None had an interest in denouncing the unknown to which Speer relegated them, indeed, for many of them this became a convenient alibi.[10] The allies turned right to this team of engineers to begin the reconstruction which so was implemented in *continuity* with the National Socialist urban planning. The great monumental axes were replaced by high-slip roads and the public buildings for the political parties by business buildings, the monuments to the new capitalistic "regime".
The *tabula rasa* that the war itself had left behind represented a great opportunity for architects who had worked throughout the Reich to realize their urban planning dreams without compromising: the old city centers were no longer an obstacle to emerging new cities, as most of them had been swooped away by Allied bombing. No *Stunde Null*: Reconstruction in Germany was in fact a new construction based on assumptions developed in the years of the Reich.

Some of the characters mentioned before, Tamms, Dustmann, but also Schmitthenner and Bonatz, collaborated as counselors in many different ways, for Duisburg Planning after the War. The last one of them, Bonatz, is the one who made the first proposal concerning the historical city center destiny.

By 1945 the administration began to develop plans for *Innenstadt*[11], seriously damaged by bombing. The first project – already mentioned – is one by Bähr, which included the demolition of houses left standing between *Sonnenwall* and *Wallstrasse* in order to leave room for a freeway with a tree line in the middle separating the two directions. The plan also aimed for a dramatic population density decrease and a parallel displacement of housing in city suburbs. This was an already formulated idea in the regime years in order to face hygiene problems, electric lighting and overcrowding bearing upon this area.

The *Neuordnungsplan Innenstadt*[12] approved in October 1948, presented this model once again, although the role of Sonnenwall had weakened - then in later years replaced by *Steinische Gasse* as north-south axis. Instead the creation of a powerful road axis in east-west direction was appointed, between the old city gates - *Schwanentor and Kuhtor* - that crossed through the old historic center to continue in *Königsstrasse*.

The idea was born in the years of Nazism in this case, also. In 1937, in the view of a reorganization of the *Altstadt* [Old City], and of an enhancement of street networks, the city government began to purchase the property located between the two city gates, in order to demolish them down and build a big avenue. The bombings literally paved the way for these projects. The face of the ancient city was sacrificed to the idea of a modern city center, dominated by the buildings for business and a powerful infrastructure.

In 1957 the Duisburg City plan [*Leitplan*] was launched, developed by Babenzien's administration starting from 1953. *Innenstadt* destiny was already marked: the plan affirmed guidelines already indicated in previous years to this part of the City, with only some variations in the road layout.
In the introduction of the report which accompany the drawings, the planners specified that the *Leitplan* had its premises on previous projects and ordinances, some of which were developed during the years of the Reich.

In the light of these new reflections Sebald's words seem more real than ever...
The ghosts of repetition can not be silenced by the rational will to cancel an unchangeable past. Memory expanded boundaries bring postwar German history back to an eternal present, where the usual actors perform in front of a white backdrop, canceled by the bombardment .

Notes

[1] "The man outside" [literal translation: "out in front of the door]. It is the title of a famous play written by Wolfgang Borchert. (1947). See: Wende W., Einen Nullpunkt hat nie gegeben, in Bollenbeck G., *Die janusköpfigen 50er Jahre*, Westdeutscher Verlag, Wiesbaden, 2000, p 19.

[2] Mies van der Rohe L., Bürohaus, in «G», n.1, 1923, p.3. My translation.

[3] See: Frank 1993, p. 59.

[4] In the late eighties some German Architecture historians – it can be mentioned Joachim Petsch, Niels Gutschow, Durth Werner, Hartmut Frank – started an important branch of research aimed to disprove the myth of *Stunde Null*. One of the most important texts dealing with this theme is "Träume in Trümmern. Planungen zum Wiederauf ìbau zerstörter Städte im Westen Deutschlands 1940-1950" [Dreams from the rubble. Plans for the reconstruction of destroyed cities in West Germany 1940-1950] of Durth and Gutschow (see bibliography). The book discusses case studies of some cities that for their importance or singularity had more weight in the history of postwar reconstruction. I chose the case of Duisburg because inherent to my doctoral research.

[5] Clemens Holzmeister from 1920 to 1922, together with Adolf Loos, headed the *Siedlung* office in Vienna City Hall.

[6] See: Schröken 2004, p. 124.

[7] In 1949 Adenauer made every effort to put an end to the denazification, to which German population was opposing. He issued a series of amnesty laws to reverse the process of denazification, he appointed chief of his staff Hans Globke, a former Nazi officer, and put pressure for the release of war criminals.

[8] See: Diefendorf 1993, p. 173.

[9] One of this cities is Duisburg. The reconstruction plan would had been elaborated by Niemeyer, in collaboration with Bähr. The plan had never been realized.

[10] See: Durth 1986, p. 20.

[11] *Innenstadt* [internal city] is referred to the part of the city once enclosed by the wall.

[12] Reorganization plan for *Innenstadt*.

Bibliography

Bollenbeck G. (ed. by), *Die janusköpfigen 50er Jahre*, Westdeutscher Verlag, Wiesbaden, 2000.

Diefendorf J. M., *In the wake of war. The reconstruction of german cities after world war II*, New York/Oxford, Oxford University Press, 1993.

Durth W., *Deutsche Architekten. Biographische Verflechtungen 1900-1970*, Friedrich Vieweg&Sohn, Braunschweig/Wiesbaden 1986.

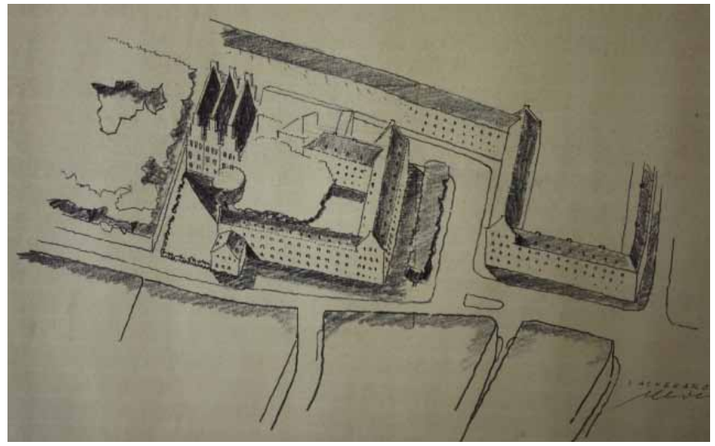
Durth W., Gutschow N., *Träume in Trümmern: Planungen und Wiederaufbau zerstörter Städte im Westen Deutschlands 1940-1950*, Friedrich Vieweg&Sohn, Braunschweig/Wiesbaden, 1988.

Frank H., *La tarda vittoria del Neues Bauen. L'architettura tedesca dopo la seconda guerra mondiale*, in «Rassegna», n.54, 1993.

Roden G.v., *Geschichte der Stadt Duisburg*, Walter Braun Verlag, Duisburg, 1970.

Schörken G., *Wiederaufbauplanung in Duisburg nach dem Zweiten Weltkrieg 1945-1960*, Der andere Verlag, Tönning, 2004.

1 – Duisburg _ 1850
2 – Reorganization plan for Altstadt Duisbug _ 1937
3 - Reorganization plan for Innenstadt Duisburg _ 1948



Pier Paolo Tamburelli
Politecnico di Milano, Italy

Notes for a Design for the 900 Km Nile City

1.
The Nile Valley starts in Aswan and ends in Cairo. It is 900 Km long.

2.
The “Nile City” is a *series of settlements* located in the Nile Valley. At the moment, this system can be called a “city” just by analogy. To call the valley a “city” is already a *project*, even if – at the same time – it is just a matter of *realism* (indeed realism would be the most radical project in contemporary Egypt).

3.
So far, the Nile City developed inside of the Nile Valley and followed the rules established for the Nile Valley in Neolithic times. The Nile City is now on the point of changing (erasing) the Nile Valley.

4.
There has been a revolution in Egypt last year. The political scenario is still very uncertain, however this is probably the best (and maybe only) moment in the last fifty years (since the previous revolution) to imagine a possible transformation of the country.

5.
A design for the Nile City needs to be radical and yet realist. It is necessary to look at the current situation with great optimism, but without illusions. We assume: no big technological leap forward, no bureaucratic efficiency all of a sudden, no change of the structure of property in the valley, no demolition of villages, no massive relocation of farmers into the desert.

6.
The population of the Nile City is expected to grow in the next years by 2% per year. The increase in population will produce an expansion of the existing villages and, consequently, reduce the amount of agricultural soils. In the next years the Nile Valley will likely need to feed a larger population with a smaller cultivable surface. The Nile valley appears as a laboratory of a future world food emergency.

7.
The Nile Valley has the clarity of a scientific experiment. Variables are reduced to the minimum: there is either fertile land or desert, very little in between. Though somehow primitive, the Nile Valley is entirely artificial. Water comes only from the Nile. Agriculture is possible only because of irrigation. Increasing population corresponds to expanding settlements and shrinking fields.

8.
Given that the width of the Nile Valley is limited, there is a possible ‘saturation’ of the equation represented by the three variables (agricultural soils, population, urbanized soils). The limit to the variation of these variables is simply extinction.

9.
Around this equation, which seems unsolvable in the long term, a second circle of elements gravitates: time, mobility, education, energetic optimisation, economic diversification are all possibilities that can help to progressively unlock the actual condition of stagnation. The key, of course, is education.

10.
Maoist advice to Egypt: fire a million policemen and hire a million teachers.

11.
The population of the Nile city is 26 millions. The density of the Nile city is 2,841/sqKm. Such density allows this otherwise rural environment to be considered a city. The Nile City is bigger than Cairo and is – in terms of sheer numbers – one of the biggest cities in the world.

12.
The Nile City has an astonishingly simple layout that is clearly defined by its geographical limits. In the middle, there is the Nile, an approximately half-kilometre-wide body of water that is strongly controlled by the Aswan Dams, several Nile barriers and man-made riverbanks. On both sides of the Nile there is a small strip of land irrigated with Nile water via an ingenious network of water channels, which create a very fertile linear oasis. On average, the valley is no wider than 12 kilometres, and it ends abruptly when it reaches the two mountain chains that soar as high as 300 metres and form the edges of the desert.

13.
The Nile Valley is the most abstract of the countries. The landscape is entirely artificial, with minimal variations. The valley is almost always visible in its entire width. The border - an enormous sand barrier - always appears in the background. The crops are the same all over the valley: wheat, corn, cotton, clover, onion, sugar cane. Fields are organized according to a roughly orthogonal grid. The dimensions of the plots are incredibly small - no way to move with a tractor inside. The result is a territory that is at the same time very abstract and incredibly dense. This produces a somehow rough landscape, very intense.

14.
Green is incredibly brilliant. The Nile Valley is primitive and artificial as ATARI videogames of the early 80s.

15.
The Nile City is based neither on any particular industry nor on rural exodus. It is a new city type that was formed simply by rapid population growth produced by the introduction of Western medical standards, the security of food availability thanks to foreign importation and the absence of family planning in a tradition-based Islamic society. The Nile City is in its essence a *city of population density*.

16.
In the Nile City, there is no working class and just a limited middle class of shopkeepers, doctors and policemen. The rest are (underemployed) peasants.

17.
In the Nile City people do not move. Going 15 Km away is already understood as uncomfortable, 15 Km away from home people already feel lost. The scale of the Nile City is Lilliputian.

18.
The Nile City is just the endless expansion of the same local conditions – the house with the field next to the house with the field, one village next to another village. The accumulation of enormous quantities in the Nile City has not yet resulted in a quantum leap. The Nile City is a city in a *pre-urban condition*, a megalopolis without an urban consciousness. In the Nile City people still engage in a Neolithic life, so there are no theatres or museums, or even a cinema or a discotheque. Even the mosques – which are produced as endless repetitions of the same building types – are relatively modest.

19.
The Nile City is an accident. There had never been a will or a wish to create it; it just happened. Inhabitants of the Nile City have no idea of the existence of the Nile City. There is no consciousness of the Nile City as a perceivable object because it is a biotope for 26 million – a zone these people never leave and therefore cannot see.

20.
The Nile City is very densely populated. With 2,841 inhabitants/sqKm, it has a density similar to those of Los Angeles, Tokyo–Yokohama and Milan. Such a comparison sounds promising, but in terms of its urban image, the Nile City absolutely cannot compete with Western or Asian megacities. Entering the Nile City is at first a disillusioning experience, yet is also astonishing at the same time, for *there is no city*.

21.
The Nile City is very rich in population but poor in physical infrastructure. The average housing surface is not much more than 5 square metres per person (the Western/European standard is around 45), there are hardly any built public facilities like office buildings or factories, and the street network is very modest, because with 30 cars for every 1,000 inhabitants (the Western/European standard is around 500), mobility is still very limited.

22.
So far, the growth of the Nile City did not change the landscape of the Nile Valley. The flatness is the same, the agricultural technology did not change much. Still the same fields, still the same crops, still the same endless horizontality, still the same endless artificiality.

23.
To imagine the future Nile city we are operating in an intellectual vacuum. According to the 19th and 20th century urban theory, the Nile city is not understandable. Maybe because, in strict Darwinian terms, the Nile City should extinguish given that is not able to self-sustain.

24.
The Nile city is a city without reference. Something very different from the western *Großstadt* or the Asian *megacity*. A city not based on industry but on agriculture. A city not based on capitalist accumulation, but simply on rapid growth of population.

25.
Contrary to all urban development based on industrial growth, there is no immigration at the beginning of the Nile city. In the Nile city there is no movement at all. In the Nile city, people stay. Growth happens as repetition, not as change. Like unicellular organisms, Nile city grows by gemmation. Its logic is: and *the same*, and *the same, and the same*… The village grows. The small town next to it grows. The capital of the Governorate next to them grows. Villages remain villages, just bigger. Small towns remain small towns, just bigger. The Nile city grows without reaching a new level of organization; it grows without establishing a new hierarchy. The farmer becomes a metropolitan inhabitant of a city made of the endless repetition of the same village. A 900 km long rag rug of housing and fields without a single movie-theater. No countryside anymore. But at the same time still countryside.

26.
The Nile City looks like a linear city, yet there is just a similarity of form, not a similarity of process. The modernist linear city (like Leonidov’s Magnitogorsk) is based on completely different thinking (industrial growth/ socialist urbanization policy/ separation of functions). Even the relation with nature is entirely different (Magnitogorsk, starting from the name, does not care much about agriculture).

27.
A single railway line, already built by the British in the 19th century, runs over 900 Km along the middle of the valley up to Aswan, forming a kind of “subway” for the Nile City with stops every 20 Km or so. Along both desert edges run two (more or less complete) highways connecting the Nile City to Cairo and the Red Sea. Every 120 kilometres there is a Governorate capital (sometimes with its own bridge over the river and a small airport).

28.
The Nile City can be read on a larger scale as a logical and beautiful diagram of infrastructure and landscape, and it can be understood as a linear city, one that is placed in the harsh and beautiful emptiness of the Sahara. The Egyptian government indeed understands the Nile City as a *linear city*. But this is what the government thinks, not how the Nile City works, given that the government is just one of the forces operating within the Nile City.

29.
Houses are everywhere the same. The building materials are taken directly from the fields. Illegal temporary brickyards turn out simple bricks made of the Nile’s fertile mud. A *Maison Domino*–like concrete skeleton functions as the basis for a house and gets filled with brickwork. Because of climatic and cultural reasons, windows are rare, and this ends up generating a hermetic architecture of rough brick surfaces. The brown architectural volumes appear in different sizes. Houses are designed in such a way as to be extendable. A small farmer’s family usually starts out with an (illegally built) one-storey structure and then gradually adds additional surfaces according to their family’s needs.

30.
Because of the fact that agricultural land is very valuable and is directly related to a family’s income, the houses are extended vertically. This results in housing that is up to five or six storeys high, even in small villages. The same technology is used for the design of commercial small-scale apartment buildings in the local centres, thereby producing mini-towers of up to fifteen storeys. Because architecture is the result of this rational and objective process, nearly all houses in the Nile City look the same. As a consequence, an astonishingly hermetic homogeneity is produced. Continuous brown building masses form modest walls between the intensely coloured green fields.

31.
Architecture and urbanism can hardly be separated from one another in the Nile City – the quality of the individual building is also that of the whole megalopolis, and so there is no difference between architecture and urbanism. On the other hand, the figure–ground relationship in the Nile City is influenced in a lasting way by the more structural qualities of the buildings. The building masses form humble, non-communicative objects but can at the same time be read as neutral, monolithic structures that emphasize the green landscape; in other words, in the Nile City the buildings are so neutral that the landscape becomes the dominant element, thereby causing an inversion of the classic figure–ground relationship.

32.
The governmental strategy, since the 80s, has been to resettle 25% of the Egyptian population on the edges of the Nile Valley. This strategy came from the absolute imperative of protecting the arable land. Anyhow, no matter official policies, 80% of the existing dwellings units are produced in an informal way. Once again the physical structure of Nile City does not correspond to its official image.

33.
Expansion of agricultural and urban soils in the desert is certainly a possibility but it cannot be seen, as in current Egyptian planning strategies, as an absolute alternative to the expansion inside the valley. Neither it can be an excuse to avoid considering the reality of urbanization in the valley.

34.
The villages will anyhow grow also inside the valley. The current rate of loss is about 45,000 feddans (19,000 ha) to urban encroachment per year. The project needs to be realistic with respect to this. Similar figures for the next years are more than probable. Egyptian urbanized areas will grow in the desert and in Cairo and along the coast and in the Delta and in the valley.

35.
A project is necessary to imagine the Nile City. And a project should be provided quickly, because in the Nile Valley, there is few water, few soils and even less time.

36.
The only possibility for the Nile Valley is to accept its unavoidable transformation into a Nile City and start to plan this transformation: to accept reality and try to control it.

37.
Further growth will prove deadly for the Nile City. From this point of view, the Nile City can be seen as a model for the whole world with its rapidly growing population. Is it possible to imagine the world as an Arcadian metropolis? Is it possible to invent other models of prosperity? Is a happy Existenzminimum even thinkable?

38.
It will be possible to produce difference inside of the valley only starting from a new awareness of its present sameness (now the inhabitants do not know that the valley is the same all 900 km long; they do not identify themselves as citizens of a single territory)

39.
By becoming a *city*, the Nile Valley will become more differentiated. A new hierarchy will appear. Difference can be introduced operating on the infrastructure of the valley (starting from processes that are already happening).

40.
A series of new corridors perpendicular to the valley and connecting the main infrastructural hubs (airports, governorate capitals, railway stations, bridges) will appear attracting urban growth and relieving pressure from rural areas. A new difference in metropolitan intensity will appear.

41.
A project for the Nile Valley should connect the national/governmental and the local/informal scale without blurring the notion of the two different scales. Still the project should connect these two realities without removing this difference (this difference in scale is a resource).

42.
National strategies will need to be explained and negotiated with local parties; informal mechanisms of growth will need to be understood and not simply rejected from the officials. Once again, teaching will be fundamental.

43.
The interventions at the different scales should be coordinated but, to a certain extent, independent, able to survive also if the implementation is partial (particularly for actions at the small scale). Also, the interventions should have impact on all the different scales (major infrastructure allow local movements as well, repeated small interventions will influence the totality).

44.
The Egyptian government currently proposes massive reclamation schemes in the Toshka area of the Sahara and in the Sinai Desert, while losing focus on the Valley. Expanding the edges of the valley through smart and sustainable planning can contribute much more to the security of the country, allowing it to focus on improvements of existing mainline infrastructures and allowing settlers to remain closer to their places of origin. Furthermore, the waters of the Nile do not need to be diverted far into the Western Desert (causing further evaporative and drainage losses), and un-renewable water sources from deep level aquifers can remain largely untouched.

45.
The water system in Egypt suffers due to its extension and to the lack of control along its hundreds of thousands of Km. The Central Directorate of Water Distribution determines water allocation quotas at each segment of the Nile River at the barrages. These amounts of water are released to the main canals on a continuous basis, and are from there allowed into the secondary canals on a rotational basis by district engineers. This is the last point of quantity control within the system. From there water in the tertiary system (mesqa's and merwa's) is self allocated by the farmers themselves through use of mobile diesel pumps (which in turn consume a lot of petrol). This self-allocation leads to water inequalities along the length of the canals as some take more than required, leading to unnecessary water shortages in some zones. It is estimated up to 8 billions m3 of water can be saved annually.

46.
The Nile City cannot afford more private cars. Rapid growth of the use of private automobiles would mean dramatic growth of street and parking surfaces and would very rapidly damage big parts of the remaining farmland. Nile city should therefore invest in public transport and higher the taxes for private car use. We believe in the further development and refinement of the already efficient system of tuk-tuks, micro-busses, long distance busses, trains and airplanes. The percentage of taxis and minibus on the overall amount of cars should increase. Modernity as experienced in the West in the 50s (buying a car as the rite of passage for farmers to jump into modernity) cannot work in contemporary Egypt. Does not matter how much Egyptian peasants would love to have a car, the Nile Valley simply cannot afford this.

47.
A project for the Nile City should consider a period of 20 years (till 2033) and imagine how to distribute a possible growth of 25% of the built surface of the valley (inside the valley and in new settlements in the desert). Without a long term plan, the Nile Valley simply cannot survive.

48.
Only by recognizing the specific *beauty* of the Nile Valley, it will be possible to design its future.

49.
A project for the Nile City should not be afraid to be banal.

50.
In the Nile Valley, the alternative is not *architecture or revolution*, it is planning or extinction.

Alessandra Terenzi
Politecnico di Milano, Italy

Identity and Landscape along the way from Jaffa to Jerusalem

Cities of the Mediterranean; a methodological approach

"The Mediterranean is a thousand things at once. Not one landscape, but many landscapes, not a civilization but a series of overlapping civilizations.
Ancient realities, still alive, together with other ultra-modern; next to the false immobility of Venice, Mestre: huge industrial node."[1] That's how Braudel describes the Mediterranean cities, in an evocative atmosphere, lights, colors, shades; a poetry of spaces, in cities all rich in history and urban functions.

The problem of the landscape, in addition to expressing the historical construction of a certain culture, involves our past, our present and our future. But what is the landscape today? "*Even today, the landscape expresses a civilization, but in fact, as it is, made incongruous by its deep contradictions.*" (L.S. d'Angiolini).[2]These contradictions, as in many other cases of rapid transformations, impressing on the territory, have transformed the delicate social balances built on the relationship between the community and space.

The different settlement plans of the late XX century and the violence of the ongoing conflicts are reflected on urban and rural settlements, leading to situations different from each other and apparently conflicting, where any previous identity of place, any sense of belonging, seems to have been lost.

This covers, however, only the surface of territorial conformations; below lye ancient structures and aspects of permanence, underneath the current urban sprawl, as lines of force that should be taken into consideration if we are to interpret the complexity of the present landscape.

Following Braudel's thought, one of the most evident dualisms existing in those places consists in the coexistence between ancient realities and modern landscapes; the historical point of view allows a kind of reading based on different levels: the deeper one, related to an almost static history, where transformations happen very slowly and the main actors are the characters of structural permanence, which remain below the surface of contingent transformations, and a more superficial level, that of history of different groups, of collective structures and fates, that shows the changes immediately readable within the urban fabric. But, what is the deeper level in such context, and what are the structural characters that remain through the multiple transformations that have taken place through different civilizations?

In order to investigate such questions it will be necessary to depart from an overview of the present moment, individuating some of the significant elements still present in these cities. Following such approach it will be possible to trace the issues related to a deeper level and identified as potential keys in order to interpret the current urban structure in the light of a different landscape that, although fragmented, reveals structural characters still present in those places.

Memory, therefore, plays a key role; nevertheless, for an active project of the architect, memory must not be identified as the final goal, but rather as a functional tool for the creative ability. As part of the ongoing dialogue between tradition and innovation, the intervention of history is translated into an act proactive and operational, "*in your actions, in your work, in your invention, that is, in the innovative act, original, that depends on you (...)*".[3]

The research focuses on the different landscapes and urban structures lying along the ancient route from Jaffa to Jerusalem that, crossing both Israel and Palestine, continues up to Amman and then even further, in the inland Middle East, up to Baghdad. In such context, lands, roads, railways, landscapes, cities, villages, agricultural activities, merge and juxtapose along an axis of connection of just seventy kilometers. This paper will consider some particular case along the way.

The new State and the recent settlement strategies: keys of reading for the present moment

Looking at the events of the late Twentieth century, we could highlight different settlement strategies along this way, that could help to understand some tensions existing in the present moment. Following the war of 1948 many Palestinians inhabitants of Jaffa left for Beirut and Ramallah.

In the progressive settlement processes of people coming from different countries we can find, directly related to the Arab emigration, a massive settlement of different Jewish communities, each one immigrating from different traditions and cultures. Thousands of new Jewish immigrants were housed in former Arab neighborhoods of the existing cities and in different villages sited especially around Tel Aviv; as asserted by Benvenisti,[4] most of them included mainly impoverished new immigrants and war refugees. Following the war, the strongest among the residents started to move to more attractive areas, while new poor Jewish immigrants took their places.

During this period the percentage of Jews living in Palestine passes in a few years from 8% (in 1917, with the beginning of the british Mandate) to 20%. These migrations produce important effects, both on the economic and social aspect as on the urban and territorial structure, where the landscape becomes an instrument through which the Zionist ideology aims to re-establish the link with the history of a people.

Departing from this scene, the settlement structure emerging in the first decades of the twentieth century along the axis from Jaffa to Jerusalem, is characterized by the juxtaposition of very different situations, built on the basis of different ethnic presences. The most evident phenomena can be seen in the transformations of the ancient consolidated cities, strategic points of transition along the continental itineraries, and also in the metamorphosis of the existing arab villages sited along the road, often flanked by the founding of new cities nearby (see maps 1 to 4).

This complex settlement structure is further enriched by a structured network of kibbutz and moshav that, strategically distributed along this landscape, have become essential part of an integrated system of settlements, related to each other's through the presence of the infrastructural network of connections.

The ancient arab villages along the road are, in many cases, destroyed or reorganized to be converted into Jewish agricultural villages: the arab settlement at Na'ani for example, located south of Ramleh, is one of the several palestinian villages that underwent deep changes during that period: in 1930 the land of Al Na'ani is redistributed into three new Jewish agricultural settlements: the kibbutz Naan and the other two villages of Ganei Hadar and Ramot Meyr.

Together with the new agricultural settlements, like kibbutz and moshav, it's possible to map the rise of new industrial landscapes: among them, Holon, founded in 1935 by a group of Polish Jews in an area previously planted with orange trees, sited along the way from Jaffa to Lidda and Ramleh. Today Holon represents the second industrial city in Israel, after Haifa.

In the same period many villages, founded at the beginning of the nineteenth century outside the walled cities of Jaffa and Jerusalem, but also of Lidda and Ramleh, become integral parts of the nearby cities and several new neighborhoods are constructed. By this time (1882) is the first Jewish Aliyah (mass migration to Palestine). Later, during the first decades of the twentieth century and in particular in connection with the second wave of Jewish immigration, it's possible to map a significant expansion of neighborhoods, accompanied by the foundation of new settlements, often born after the demolition of previous arab neighborhoods.

During the 1950s, after the birth of the Israeli State, many former Arab urban areas, due to the poor socioeconomic situation of the residents, deteriorated into slums, some of their houses collapsed causing casualties among the recently housed Jewish population. For many years these areas were neglected by the municipality becoming slums on the outskirts of the richer Tel Aviv and synonymous with crime and poverty.

Hence, from an urban point of view, not only the local arabs but also the jewish immigrants coming from different arab countries and considered as the weak component of the Jewish people (Mizrahim jews), have been subjected to events of spatial exclusion and urban discrimination. This phenomenon can also be read as the consequence of the general strategies developed in the National Plan for Israel, elaborated during the fifties by Arieh Sharon, a Jewish architect coming from the Bauhaus School: an important role of his plan was centered in the redistribution of jews in the country, with the consequent location of the weaker jews in more peripheral and poor areas, together with the few local Palestinians who remained in Israel, in opposition to the rich and consolidated settlements of Ashkenazi jews.

This, for example, specifically happened in consolidated cities as Lidda and Ramleh, still today inhabited by weak ethnic groups of population and characterized by poor and underdeveloped areas, abandoned to a state of urban decay and socioeconomic crisis. This dramatic context led to a policy of slum clearance with the demolition of many urban sectors, as happened, for example, in some former Arab neighborhoods in the city and around Jaffa, such as Manshiya, Givat Amal and others. Manshiyya was located on the seafront just to the north of the Harbor; built by Egyptian immigrants in the nineteenth century it was destroyed in 1948, but a sign of its former structure can be seen in the Hassan Bek Mosque, belonging to that period. Even the garden that lies on the top of Jaffa's hill, with a suggestive view on the skyline of Tel Aviv, replaces indeed a previously tightly built-up area whose demolition started with the British (maps 5-6).

The process of urban redevelopment that followed became more intense with the rapid rise of the housing shortage problem. Because the former Arab urban areas did not supply all housing needs for the massive waves of new Jewish immigrants, the Israeli authorities, in addition to selling land to private contractors who were building for the middle and upper population, also started to construct transit camps known as *ma'abarot*, for the rest of the population, concentrating there especially the new Jewish immigrants from Arab countries: in such places, the life of the new Jewish immigrants was often very hard, as demonstrated by many literature resources of this time, testifying the dramatic conditions in which they have been forced to live.[5]

This character of the Jewish society, for example, can be still readable in the present moment, underlying the importance of considering the interpretation of present landscape into a historical context. However, despite social and urban tensions, characterizing the present moment, a past of cohabitation and of a different, consolidated landscape, related to continental connections among different cultures, can still be read in many structures of the present town.

Silent structures and aspects of permanence; territorial and political changes of the XIX century

The travel along this ancient itinerary departs from Jaffa: nowadays, from a first image of this ancient city, a superficial touristic framework comes out, characterized by a romantic and idealized vision of the typical exotic city. Nevertheless, beyond this first scene, a deeper look of this urban structure highlights the existence of route's tracks built on great continental connections, allowing a different reading of this system, based on the building of a first point of landing, organized through the different structures related to the port.

Then, going beyond this first system, it is possible to read the traces of the routes of the exchange, built on great relationships, the presence of the road, with the caravanserais, with the religious structures and the hostels for pilgrims, merchants and travellers (map 7). Even it's recent urban transformations must be read in the view of the structural nature of Jaffa, as strategic link between the Mediterranean and the Middle East. Hence, this levant port should be considered, not only in the frame of a coastal connection, but even and particularly in the frame of continental routes of penetration in the inner lands that, connecting the coastal ports with the inland ports – the desert city ports as Ramleh and Jerusalem – allow the passage of products, peoples and cultures from the deep east regions to Europe and viceversa.

Further on along the way, this settlement structure leads to the ancient towns of Lydda and Ramleh (this last one founded by the Arabs during the first period of the Islamic expansion), retro ports of Jaffa: here tangible traces, identified in the grinders, in the oil mills and in ancient structures linked to the production of oil, soap, oranges, testify the existence of a material civilization that interacted actively in these landscapes.

These processes of settlements transformation are, in fact, directly related to a deep change and rapid evolution, even in the agricultural landscapes, with the introduction of different and new cultivation techniques applied both on the traditional crops, as on the new crops, imported from different Countries. The most evident change is characterized by the passage from an agricultural economy, primarily based on the cultivation of olive tree, to an intensive export economy, based on the production of citrus.

Finally, this ancient way leads to Jerusalem, the final spiritual and cultural landing point, where all the landscapes and contexts met along the itinerary are concentrated in their highest expression.

Especially since the Napoleonic invasion, this area is signed by a strong demographic, economic and urban growth, involving both the main cities along the axis and the surrounding villages, with the construction of markets, religious and commercial buildings. The period that follows is characterized by massive migratory flows, especially to Jaffa, due to the numerous job opportunities: sephardi jewish communities coming from North Africa, followed by Ashkenazi Jews coming from Europe, start to settle in new neighborhoods placed to the northand and south of the old city, leaving the center to a Muslim majority. With the conquest of Ibrahim Pasha (1831) Jaffa becomes a destination for major migrations of Egyptian soldiers who set up outside the old town, founding a series of neighborhoods, including Abu Kabir and Manshiyya.

From the second half of the XIX century the growing economy encourages further migrations from Syria, Jordan, Lebanon, North Africa, Afghanistan, Turkey, Greece and Bulgaria, but also America and Germany. In Jerusalem the first Jewish and arab neighborhoods outside the walls, along with foreign colonies (Greek, German, American, among others), start to change the structure of the ancient city; the same happens along the way, with the founding of new settlements belonging to different ethnic communities.

At the beginning of the nineteenth century, Jerusalem's population numbered fewer than 10,000 and Jaffa just 5000: in the course of just a century both cities' population grew to approximately 50,000.

The processes of transformation and expansion involving the towns along the axis lead to the construction of new roads which greatly improve the urbanization of the area; among them, the reconstruction of all the road from Jaffa and Jerusalem and the first railway line in Palestine (1892), connecting Jaffa and Jerusalem through Ramleh and Lydda. This, combined with other episodes, like the opening of the Suez Canal and the safety and speed of transport by sea, transforms Jaffa in the largest city in Palestine and the third port of the East, after Beirut Alexandria.

In the second half of the XIX century central Palestine was exporting large quantities of cotton, wheat, sesame, fruits and vegetables, but during this time the trade of oranges began to increase as the main export product, compared to the quantity of oranges produced only one-sixth was consumed in Palestine, while the remainder was exported with Greek ships to Egypt, Asia Minor and then to Europe, which soon became the primary destination of all exports.

The growing European interest in respect of the economic and touristic development along the Palestinian cities is also evident, since the XIX century, with the founding of educational institutions, administrated by English, Scottish, French, Greek

Orthodox and Maronite ecclesiastical structures; these buildings, sited along the route that leads to Jerusalem, even today allow the reading of a complex system where each urban and architectural element, far from being considered as single and autonomous structure, must be read in its necessary relation to a complex network of connections at the territorial level.

The Zionist ideology; the birth of Tel Aviv and the decline of Jaffa

The early years of the twentieth century are characterized by profound changes directly related with the birth of Zionism, followed by a substantial revision of the main Jewish settlement policies.

The more representative phenomenon is marked by the founding of Tel Aviv (1909), the first Jewish city in Palestine. By this time Jaffa had became the industrial, commercial and cultural center for excellence in all Palestine, both for Arabs and for Jews. The founding of Tel Aviv will lead to a drastic decay of Jaffa, in favor of the new Jewish city.

The ambivalent relationship between Jaffa and Tel Aviv is readable both in the eclectic style of architecture, both in the town plan for Tel Aviv, developed by Geddes in 1925. The early development of the city is defined by a spontaneous expansion, characterized by the search for identity, a remarkable eclecticism, experimentation and research, where the habits of the origin's countries, merged with local building traditions and languages, are expressed in the different forms of architectural design.

The Geddes' plan (1925) seeks primarily to define an overall structure for a town grew up without any plan (map 8). The references to modern language are considerable, from the use of a regular and hierarchical grid, to a specific re-interpretation of the zoning technique and the type of garden cities. Nevertheless, the reference to the ancient arab architecture of Jaffa remains an evident architectural element of project.

In this constant dualism between ancient and modern structures, the new settlement strategies are juxtaposed to the characters of an ancient and consolidated landscape. The first decades of the twentieth century are characterized by important phenomena of demolition and reconstruction, affecting entire villages and different parts of the cities.

Another aspect that, in the British Mandate period, play a decisive role on the fate of these cities is marked by the growing Zionist ideology: the advent of Zionism marks a moment of fracture, with the beginning of a profound crisis in the coexistence processes. This period is then marked by the rise of phenomena of nationalism and intolerance, not only between Arab and Jewish communities, but also within the Jewish communities themselves: Sephardic and Mizrahi Jews, who came well before the rise of Zionism, find themselves in strong conflict with Ashkenazi Jews, immigrated after 1880, whose objectives are concentrated in the Zionist ideology and whose culture clashes sharply with that of the Oriental Jews, based on the traditions and customs of the Aarab world and considered backward and deviant than the western ideals based on the construction of a modern Jewish state.

The presence of the British in Palestine, together with the support offered to the progressive establishment of Jewish communities in the country, worsens the relations among the different settled communities, leading to the explosion of violent clashes between Arabs and Jews: among the first consequences of these clashes, at the urban and territorial level, several neighborhoods founded at the end of the XIX century and belonging to Jaffa were gradually annexed to Tel Aviv. The loss of these villages, together with the construction of a new port in Tel Aviv during the twenties, that replaced the historical port of Jaffa, further undermined the role played by the ancient city-port, leading to a rapid growing of Tel Aviv, which quickly became the main core, center of cultural, economic and administrative life of Israel.

The investigation on these complex and different landscapes is aimed to open new questions about the sense of these architectural structures, the different settlements, the infrastructural aspects, the potential projects and the possibilities of co-existence among different cultures, along the history, as well as in the present moment. Among the numerous open questions it would be interesting to understand if this place, Israel or Palestine, could finally represent a country for people, or if it is really just a place of contested stones.

The research, deeply digging between the present moment and the long history, tries to highlight the unique richness of a composite landscape, whose deep and infinite layers testify the tangible existence of innumerable civilizations and cultures.
In the light of this reality one should wonder whether this landscape could truly be defined a promised land and, in the light of the several cultures that have lived there, who was then promised this land.

Notes

[1] F. Braudel; Civiltà e imperi del Mediterraneo nell'età di Filippo II; Einaudi; Torino; 1953.

[2] L. S. D'Angiolini; Come si costruiva paesaggio, come ancora si potrebbe. Quaderni del Dipartimento di progettazione dell'arc hitettura,n.1;Milano:Clup; 1984.

[3] Cit. E. N. Rogers, Il Senso della Storia. The Sense of History, Unicopli, Milano 1997, p. 18.

[4] E. Benvenisti, C. Gans, S. Hanafi; Israel and the Palestinian refugees; Springer; New York; 2007.

[5] Concerning this topic see the researches of Piera Rossetto, PhD researcher of Studies on Mediterranean Asia and Africa; Ca Foscari University.

General bibliografy

AA.VV., *Per un'idea di città*, Culva, Venezia 1984.

E. Bordogna, G.P. Semino, *Per una storia interna operativa e una storia esterna strutturale: note didattiche*, in "Quaderni del Dipartimento di progettazione dell'architettura", n.1, Clup, Milano 1984.

F. Braudel, *La Méditerranée et le Monde meditérranée à l'époque de Philippe II*, Colin, Paris 1982; Ed. It. Einaudi, Torino 1953.

G. Canella, *Un ruolo per l'architettura*, Clup, Milano 1969.

G. Canella, *A proposito della scuola di Milano*, Hoepli, Milano 2010.

E. Carr, *Sei lezioni sulla storia*, Einaudi, Torino 1966.

M. Cerasi, *La città dalle molte culture. L'architettura nel Mediterraneo orientale*, Scheiwiller, Milano 2005.

I. Chambers, *Le Molte voci del Mediterraneo*, Collana diretta da Ugo Fabietti, Raffaello Cortina Editore, Milano 2007.

L.S. D'Angiolini, *Come si costruiva paesaggio, come ancora si potrebbe*, in "Quaderni del Dipartimento di progettazione dell'architettura", n. 1, Clup, Milano 1984.

M. Giovannini, *Spazi e culture del mediterraneo*, Kappa, Roma 2006.

M. Guidetti, *Storia del Mediterraneo nell'antichità: IX-I secolo a.C*, Editoriale Jaca Book, Milano 2004.

E.J. Hobsbawm, T. Ranger (a cura di), *L'invenzione della tradizione*, Einaudi, Torino 2002.

S.P. Huntington, *Lo scontro delle civiltà e il nuovo ordine mondiale, Il futuro geopolitico del pianeta nell'analisi più discussa di questi anni*, Garzanti, Milano 2000.

Le Corbusier, G. Gresleri (a cura di), *Viaggio in Oriente. Charles-Edouard Jeanneret fotografo e scrittore*, Marsilio, Venezia 1995.

T.E. Levy, *The archaeology of society in the Holy Land. New approaches in anthropological archaeology*, Continuum International Publishing Group, New York 1998.

B. Lewis, *Culture in conflitto. Cristiani, ebrei e musulmani alle origini del mondo moderno*, Donzelli, Roma 2007.

V. Lutsky, *Storia moderna nei paesi arabi*, Teti, Milano 1975.

E. Mantero, *Progetto e storia: un'occasione di riflessione*, in "Quaderni del Dipartimento di progettazione dell'architettura", n. 1, Clup, Milano 1984.

P. Matvejevich, *Breviario mediterraneo*, Prefazione di Claudio Magris, Garzanti, Milano 1991.

W. J.T. Mitchell, *Landscape and power*, University of Chicago Press, Chicago 2002.

S. Muratori, *Studi per una operante storia urbana di Venezia*, Istituto Poligrafico dello Stato, Roma 1960.

D. Palterer (a cura di), Erich Mendelsohn, *New Reflections*, Tre lune, Mantova 2004.

H. Pirenne, *Le città del Medioevo*, Laterza, Roma-Bari 1971.
M. Poëte, Introduzione all'urbanistica. La città antica, Einaudi, Torino 1958.

E. Poleggi (a cura di), *Città portuali del Mediterraneo, storia e archeologia*, Sagep, Genova 1989.

L. Quaroni, *Il progetto per la città. Dieci lezioni*, Kappa, Roma 1996.

S. Recalcati, *La battaglia delle idee. Il contributo di Lucio Stellario d'Angiolini all'urbanistica italiana*, Unicopli, Milano 2010.

E. N. Rogers, *L'elemento della tradizione*, in Cesare de Seta (a cura di), *Gli elementi del fenomeno architettonico*, Guida editori, Napoli 1981.

E.N. Rogers, *Il senso della storia*, Unicopli, Milano 1997.

E.N. Rogers, *Esperienza dell'architettura*, Skira, Ginevra-Milano 1999.

M. Rostovtzeff, *Città carovaniere*, Gius. Laterza e Figli, Bari 1994.

J. Royer, *L'urbanisme aux colonies et dans les pays tropicaux*, *La Charité-sur-Loire: Delayance*, Paris 1932.

E. Said, *Orientalismo*, Feltrinelli, Milano 1999.

Bibliografy on the Middle East area

G. Blake, J. Dewdney, J. Mitchell, *The Cambridge Atlas of the Middle East and North Africa*. Cambridge University Press, Cambridge 1985.

A.N. Eslami, *Architettura del mondo Islamico. Dalla Spagna all'India (VII-XV secolo)*, Mondadori, Milano 2005.

H.A.R. Gibb (a cura di), *The Encyclopaedia of Islam, Vol. V*, E.J. Brill, Leiden 1982.

A. Petruccioli, Dar al-Islam. *Architetture del territorio nei paesi islamici*, Carucci, Roma 1985.

L. Quaroni, *L'Islam e noi. Due culture parenti. Cugine in secondo grado, Conferenza al Centro Studi per l'Ambiente nei Paesi Islamici*, Genzano di Roma, maggio 1982.

F. Rizzi, *L'Islam giudica l'Occidente*, Argo, Lecce 2009.
AA.VV. Tel Aviv, *Modern Architecture, 1930-1939*, Wasmuth, Michigan 1994.
AA.VV. *Jerusalem 1850 – 1948*, Autrement, Paris 1999.

R. Aharonson, *Rothschild and early Jewish colonization in Palestine; Geographical perspectives on the human past Israel studies in historical geography*, Rowman & Littlefield, New York 2000.

A. Bassi, *Pellegrinaggio storico e descrittivo di Terrasanta*, Tipografia subalpina di Artero e Crotta, Torino 1857.

M. Benveništi, *Sacred landscape: the buried history of the Holy Land since 1948*, University of California Press, London, 2000.

R. El Eini, *Mandated landscape: British imperial rule in Palestine, 1929-1948*, Routledge, New York 2006.

G.G. Gilbar (a cura di), *Ottoman Palestine, 1800-1914: studies in economic and social history*. Ed. Brill Archive, Leiden, The Netherlands 1990.

M. Halbwachs, *La topographie légendaire des Évangiles en Terre Sainte: étude de mémoire collective*, Presses universitaires de France, Parigi 1941.

M. Halbwachs, *Memorie di Terrasanta*, Arsenale Editrice, Venezia 1988.
T. Herzl, *Lo stato ebraico*, Il Melangolo, Vienna 1896.

T. Herzl, La terra vecchia e nuova, Il Melangolo, Vienna 1902.
R. Kark, Jaffa, A City in evolution, 1799-1917, Yad Izhak Ben Zvi Press, Jerusalem 1990.

R. Kark, *The Traditional Middle Eastern City The Cases of Jerusalem and Jaffa During the Nineteenth Century*, in Sonderdruck aus Zeitschrift des Deutschen Palastina-Vereins Bd. 97 (1981).

Vom "Verfasser uberreicht:
R. Kauffmann, *Amenagement des colonies juives en Palestine et principalement des colonies agricoles de l'organisation sioniste*, in J. Royer, *"L'urbanisme aux colonies et dans les pays tropicaux: communications & rapports du Congrès international de l'urbanisme aux colonies et dans les pays de latitude intertropicale"*, Delayance, Paris 1932.

Alessandra Terenzi
Politecnico di Milano, Italy

Legends:

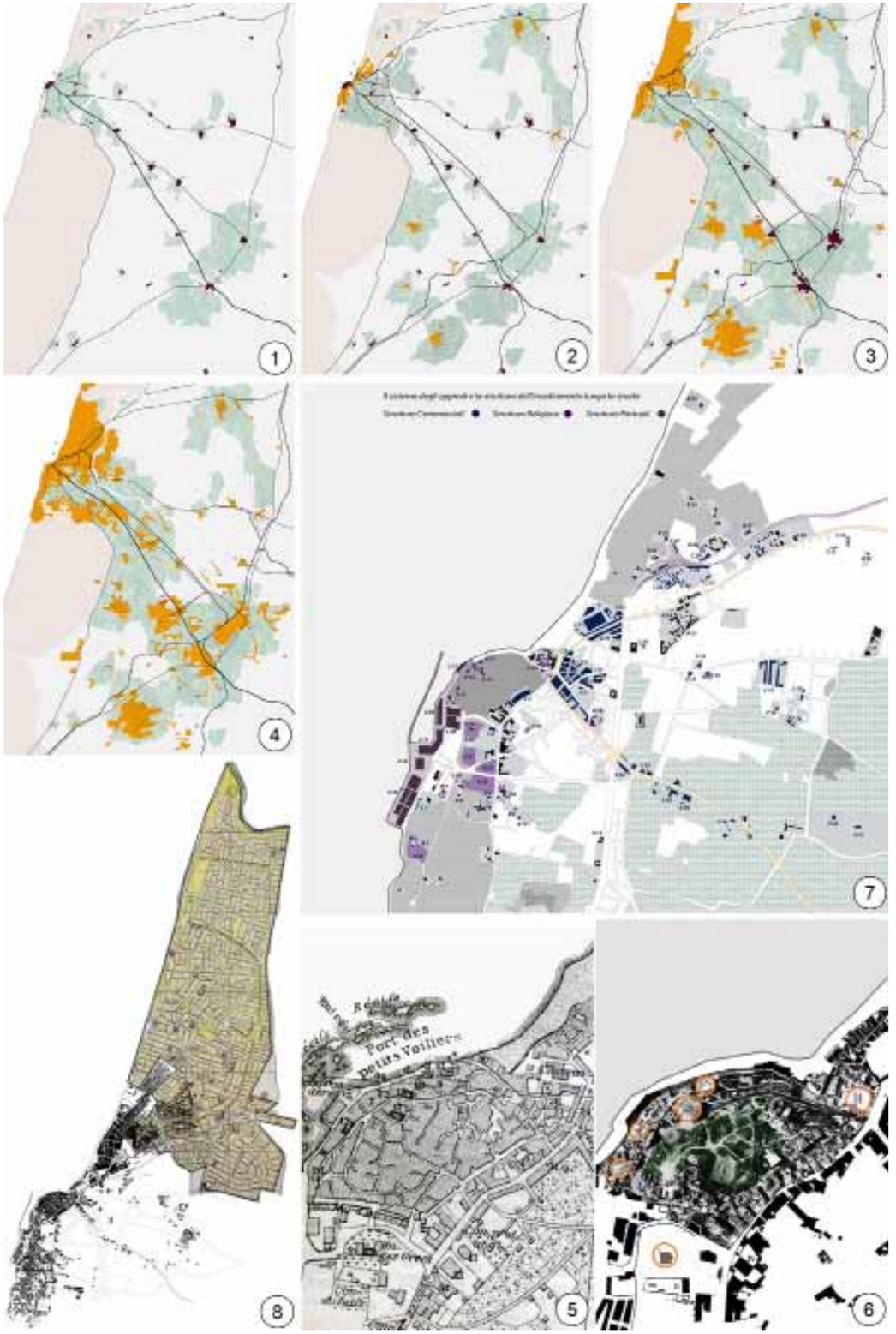
Maps 1 to 4:
These cartographic elaborations (constructed by A. Terenzi) represent the attempt to reconstruct the territorial evolution of the different urban cores along the way during the XIX and the XX century, chosing some significant historical periods. The particular area of interest in these maps includes the way from Jaffa (number 1 in the maps) to Lidda and Ramleh (numbers 11, 12 in the maps). The brown areas represent the palestinian settlements, while the orange ones represent the Jewish new settlements.
The different periods are the following: 1878 (map 1), 1919 (map 2); 1944 (map 3); 1956 (map 4).

Map 5:
In this map of old Jaffa (Baedeker 1912) it is possible to see the high density of the built up area inside the old town.

Map 6:
In this recent aerial photo of Jaffa we can see a green area inside the old city: this big park is the result of the intense demolitions started with the British and continued with the creation of the state of Israel.

Map 7:
This map shows a reconstruction of the different significant structures that organize the whole system of landing related to the port: commercial and religious structures are integral part of a comprehensive system of reception and subsequent reorganization of goods, pilgrims and travelers passing through this port. (map elaborated by A. Terenzi)

Map 8:
In this map the Geddes Plan has been juxtaposed to the urban structure as it appeared during the Twenties of the twentieth century. (map elaborated by A. Terenzi)



James Tice
University of Oregon, Oregon, U.S.A.
Allan Ceen
Studium Urbis, Rome

The GIS Forma Urbis Romae Project: Creating a Layered History of Rome

Rome provides fertile ground for exploring ideas about architecture and urban design. These ideas have profoundly influenced the course of Western Civilization and continue to inspire contemporary architects and urban designers. Our research focuses on the urban structure of Rome using an innovative geographic database and advanced GIS technology that builds on the archeological map of Rome, the *Forma Urbis Romae* by Rodolfo Lanciani. We intend to present a "work in progress" (an overview) of our long term, multi-disciplinary project involving archeology, architectural history, urban studies, cartography, history and geography. A major aspect of this research is to examine continuities of, and transformations to, the urban fabric of Rome in order to demonstrate the longevity and flexibility of its unique urban morphology. Because the *Forma Urbis Romae* simultaneously reveals the historical epochs of the city with exceptional clarity, it is a useful model to show the Roman genius for accommodating (assimilating) architectural and urban change. To demonstrate the value of Lanciani's map as an analytical tool, we will conclude our paper by using it to examine the evolution of one important urban complex in Rome that represents two millennia of historical continuity.

Overview

Published in 1901 by the Italian archeologist, Rodolfo Lanciani (1845 – 1929) the Forma Urbis Romae is a cartographic masterpiece that sums up the rich cartographic tradition to be found for Rome that began almost two thousand years ago. Today it remains the standard archeological reference for the city even though it contains some errors and does not incorporate the host of archeological discoveries that have come to light since its original publication. Beyond the rich cartographic layers brought into prominence by Lanciani, we have geo-rectified (brought into precise cartographic alignment) a variety of other cartographic documents, thus inserting additional layers into those provided by Lanciani. Primary amongst them are the early third century marble map of Rome, the Forma Urbis; the digitally enhanced 18th century Nolli map; a 20th century photogrammetric survey by SARA Nistri and 21st century satellite imaging. Beyond the broad sweep provided by these comprehensive maps we are also incorporating information from innumerable local topographic surveys that delve into specific architectural complexes and archeological zones in greater detail. Examples include the Roman Forum and the Crypta Balbi, a Republican era theatre and quadriporticus (inaugurated in 14 B.C. and only recently excavated in the 1980s). Our objective for *The Forma Urbis Romae* Project is to create a geo-database and website that updates and expands Lanciani's map in digital form. This platform will at once permit architects, urban designers and scholars to access information about the city as it has evolved over time while also providing for new discoveries to be incorporated into the map as they occur. The ultimate goal is to provide a rich store of information about Rome for analysis, interpretation and discovery.

Background

Forma Urbis Romae was issued in installments from 1893 to 1901. The map not only records the ancient city of Rome but also extensive cartographic detail about subsequent historical epochs including Early Christian, Renaissance and Baroque, and Modern. With his map, Lanciani paints a portrait of over two millennia of human history in the longest continuously inhabited city in the in the West. No other city has been recorded in this fashion either in method, scope or scale. The map is drawn at 1:1000 and consists of 46 plates each measuring 25 by 36 inches (64 x 91 cm), which, when combined, yields overall dimensions of approximately 17 by 24 feet (5.2 x 7.3 m), the largest map of Rome produced since the Severan marble plan, the early 3rd century AD *Forma Urbis*. That monumental plan, almost four times the size of Lanciani's, served as an inspiration for his work; as evidence, its surviving fragments discovered near the Roman Forum in 1562 are duly drawn and incorporated into Lanciani's own map. In 1903 Lanciani himself set up copies of the remaining fragments of the *Forma Urbis* on the wall of a courtyard of the Palazzo dei Conservatori on the Campidoglio. This attempt to recreate the grandiose ancient map was demolished in 1995 to make way for the new hall housing the statue of Marcus Aurelius.

Perhaps the most profound of all Lanciani's cartographic precedents is the 1748 *Pianta Grande* by Giambattista Nolli. This was the first accurate map of Rome. Its unsurpassed, meticulous detail of the Baroque city reveals important churches, palaces and extant ancient monuments but also includes bridges, aqueducts, prisons, pawnshops and even street drains (there are 1,320 sites identified in its index while an additional 700 names appear as text on the map proper, bringing the identified sites to well over 2,000). The Nolli map quite literally served as the base for Lanciani's map, as one can clearly see its appearance as the distinctive red layer in the *Forma Urbis Romae* plates. Likewise Lanciani's map is inclusive in its representation of building types and other features. A heterogeneous array of structures such as temples, basilicas, palaces, *insulae* (housing blocks), granaries, baths, sports complexes and even ancient trash dumps are shown with remarkable attention to detail. The city's infrastructure is given equal weight as the depiction of streets, cisterns, aqueducts, bridges and city walls testify. A further inspection of the map reveals 19th century projects delineated but not yet completed at the time of the map's publication such as the proposed flood embankments being built along the Tiber and the gridded blocks of the Prati district just north of the Vatican.

Significance

The Lanciani map is an important cartographic resource for several reasons. Conceptually, it provides a comprehensive historical framework of Rome showing spatial relationships horizontally (for places within a given time frame) and vertically (for specific places over time). Lanciani's map was the first to provide a comprehensive plan of the ancient city that accurately represented its constituent elements in their correct spatial relationship and in relationship to one another within the limits of known archeological scholarship of his day. It was also the first map of Rome to demonstrate a comprehensive layered understanding of the city that revealed how places in Baroque and Modern Rome were shaped by the ancient structure of the city. This aspect of the map highlights the remarkable staying power of ancient structures that have influenced subsequent urban form. For example, Lanciani reveals how the configuration of Piazza Navona with its later Baroque embellishments closely follows the footprint of Domitian's 1st century stadium on whose foundations it was constructed. While this relationship is well known, his visual depiction of it clarifies one's understanding and provides a vivid graphic analysis of the spatial evolution of these and other sites. We will continue this theme in more depth at the conclusion of this paper.

It is worth commenting upon Lanciani's method especially since its innovative technique bears directly upon our own approach. Being acutely aware of the stratified nature of Rome with its successive historical epochs, Lanciani captured this profound insight by devising the simple technique of representing the city as a series of transparent layers, each one of which is color-coded for easy visual recognition. Taking advantage of the late 19th century innovations in lithography, his superimposed plans reveal a palimpsest with three distinct historical strata: Ancient and Early Christian (black), Renaissance and Baroque Rome (red), and Modern (light blue).

Challenge

Besides lacking currency, the 1901 Lanciani map has limitations imposed by the medium in which it was realized: the printed book. The large plates can be cumbersome to handle. It is a trying experience to focus on a zone of the city if it includes multiple plates, separated as they are by distracting joints, or more difficult still, distanced by several pages in the bound version. Technical restrictions limited Lanciani to three temporal layers. Annotations were limited by space available so that textual notes did not obscure drawings. Most problematically, Lanciani's map is difficult to update - and, thus, unable to grow with the expanding body of knowledge that in principle it was dedicated to reveal. The fact that the 1901 version has not changed in 111 years is a testament to the inertia that can result from exclusive reliance on print media.

Method

We are currently assessing the accuracy of Lanciani's map. This is being accomplished using two processes. The first is scientific. It is now possible to geo-rectify (carefully align) historic maps such as Lanciani's using GIS software (ArcGIS). Using this tool, the complete *Forma Urbis Romae* will be brought into accord with actual geographic coordinates. Once this has been accomplished it can be geo-referenced (cross-referenced topographically) with contemporary satellite imaging and coordinated with other scientific surveying techniques, and original cartographic layers of Rome in our collection. The second aspect of the work will critically examine historical and archeological evidence uncovered since 1901. Relying on our own expertise and that of our expert consultants, this information will be referenced into the map correcting and amplifying Lanciani's work so that it corresponds to the most authoritative information available.

Work Already Accomplished

The 46 plates from the original *Forma Urbis Romae* have been scanned at high resolution using the detailed 1:1000 scale original publication. These plates have then been digitally "stitched" together to form one, large seamless map, in effect creating a digital facsimile of the original plates composed as one unified document. The newly assembled Lanciani map provides us with a template that is the basis for separating the layers that constitute the original map itself. Using our copyrighted Nolli map, the Medieval/Renaissance/Baroque "red layer" has been extracted as a vectorized (scalable) slice and then reinserted into the Lanciani master, thus providing a more expandable base. Furthermore, we have geo-rectified (rubber sheeted) the Nolli plan with satellite imagery as a separate layer reaffirming that very high degree of congruence that exists between the two. These updated layers provide, an accurate, scientific base for the work that is to follow.

Comparative Example

As noted above, a major aspect of this research is to examine continuities of, and transformations of, the urban fabric of Rome in order to demonstrate the longevity and flexibility of that remarkable urban condition. For example, in the Vatican, the Lanciani map reveals how Nero's Circus (the place of St. Peter's martyrdom in the 1st century) served as a partial foundation for the 4th century basilica dedicated to that saint (in black) and how that structure in turn provided the armature for Renaissance and Baroque phases of construction of the basilica which culminated in the 17th century architectural complex (in red). When the Lanciani map is brought into accord with a more detailed edition of the Nolli map one can see how carefully these interventions were integrated into the urban context. One comparative analysis of these maps will serve to demonstrate this integration and it will also underscore how carefully constructed continuities over several centuries have been assiduously maintained - only to be compromised by a 20th century intervention.

The basilica of S. Pietro and the Castel S. Angelo are two magnets that define the edges of the Medieval Borgo, the former, built over the Circus of Nero as it nudges against the Vatican hill, the other occupies Hadrian's tomb along the Tiber. The prominent obelisk, transported to Rome by Caligula, is a central component in this set of relationships, and is shown twice on the Lanciani map. First it appears as it stood on the *spina* (central roundabout) of the 1st century circus of Nero and again, a few dozen meters away, in the center of the Baroque piazza, moved there in 1586 by Domenico Fontana, Sixtus V's architect.
The location of the obelisk is at the precise center of the oval designed by Bernini 8 decades later that defines the piazza, but interestingly enough, as pointed out by Allan Ceen, it does not align with the axis of the basilica, being shifted approximately 4 meters to the north (a fact that can be easily verified by sighting between the two while facing perpendicular to the main facade). Lanciani, who normally records such information accurately, errs by showing it on the axis of the basilica. It is Nolli who locates the obelisk accurately, and it is his correction that we have duly recorded on our updated map. Why is the placement of the obelisk slightly off axis? Surely it is not a question of insufficient technical knowhow as the sophisticated apparatus to move the obelisk and the construction of the basilica attests. Observing the notable variance between the basilica axis and the obelisk/basilica-portal axis as they approach Castel S. Angelo, we can see that the latter split the difference between Borgo Vecchio and Borgo Nuovo, almost dividing the Spina in two. With the removal of the Spina buildings, to the viewer approaching S. Pietro, the obelisk would have appeared to be aligned on the central axis of the façade. From this optical adjustment it is evident that Sixtus V's planners had intended to demolish the Spina at the time of the 1586 placement of the obelisk, demolition which did not actually take place until 1935.

In between the two landmarks a network of streets has historically connected the two complexes in their various incarnations. The 9th century Leonine Walls and its escape corridor built into the walls by Alexander VI is one such connection, clearly shown by Lanciani. None, however, is more important for this pattern of street relationships than the Borgo Nuovo, the first Renaissance broad straight street built for the Jubilee year of 1500 by the same Borgia pope. Rather than aiming at S. Pietro, this point-connector street was drawn in a straight line joining an arch attached to one of the corner turrets of Castel S. Angelo, the Porta S. Petri, to the Porta Palatina (the main door of the papal palace). The axis of this grand entrance, built at the end of the 15th century, was carefully integrated into Bernini's scheme for his colonnades. Bernini's mastery of the urban setting is shown in the Lanciani map (in this case the Nolli layer is supplemented by plans provided by the 19th century French architect and documentarian of Roman architecture, Paul Marie Letarouilly). Bernini extended the axis of Borgo Nuovo straight into the Vatican complex, using it to terminate the right-hand colonnade of the oval piazza, as well as to determine the angle of the corridor flanking the trapezoidal piazza, and finally as the axis of the Scala Regia.

Thus he completed a sequence from the Castel S. Angelo and its bridge along the Via Borgo Nuovo, through the Piazza Scossacavalli, to the Piazza S. Pietro, up to the Porta Palatina, past the basilica's narthex with the equestrian statue of Constantine on the right, upward again through his Scala Regia, finally climaxing at the Sala Regia. This is the reception hall that joins the late 15th century Sistine chapel to the papal throne room. Unfolding in the opposite direction, this carefully contrived sequence becomes the first leg of the processional route called the possesso. This is the ceremony that accompanies the election of each new pope, consisting of an elaborate procession from St. Peter's to S. John in Lateran at the other end of the city. This remarkable example of Roman urbanism, described by Lanciani's map (with amendments), has been achieved by knitting together Ancient, early Christian, Medieval, Renaissance and Baroque structures. Its genius lies in its ability to achieve continuities between seemingly unrelated events and structures over hundreds of years, transforming the physical fabric and symbolic meaning into a new whole, while simultaneously respecting the inherent deep structure of each part.

Into this intricate web of complex relationships, in the 1930s Mussolini's architects rammed the Via della Conciliazione between St. Peter's and Castel S. Angelo. Along with a substantial portion of the Borgo, the Spina (the central city blocks defined by the Borgo Nuovo on the north and Via Borgo Vecchio on the south) was swept away by this most un-Roman street. As numerous authors have pointed out, this gesture undermines the dramatic experience of arrival at the vast piazza that previously resulted from moving into that space through narrow shaded streets, now destroyed. This observation is undoubtedly true. Less frequently acknowledged is that this broad swath of space also undercuts the concatenated processional route of piazza-street-piazza-street-bridge between the Vatican to Ponte S. Angelo.

James Tice
University of Oregon, Oregon, U.S.A.
Allan Ceen
Studium Urbis, Rome

A more detailed analysis shows that by superimposing a satellite image over the Lanciani map the forecourt of the Piazza Pio XII blocks the previous view corridor of the Borgo Nuovo thus further severing the connection between Porta Palatina and Castel S. Angelo. This relationship, at the very least, could have been maintained even with the Via della Conciliazone running through the Borgo had the structures framing the forecourt been differently aligned by only a few degrees to allow the Borgo Nuovo view axis to remain. It is ironic that the street christened "conciliazione," dedicated to the reconciliation of the Vatican and the Italian state symbolized by the city of Rome should destroy one of the most brilliant examples of urban "conciliation" ever devised. Unfortunately the broken continuities represented by this urban intervention, completed as late as 1950, sum up a modern condition, not only for Rome but for many other cities as well.

This paper has shown how *Forma Urbis Romae* by Lanciani, once updated and corrected, can serve as a critical instrument for studying, documenting, analyzing and evaluating urban settings in Rome as they have evolved over time. Such analyses present a unique opportunity to expand our knowledge of the city and its foundations and to learn lessons that still resonate with us today.

Select Bibliography

Carettoni, G. et al, *La Pianta Marmorea di Roma Antica, 2 vols*., Roma, 1960

Rodriquez-Almeida, *Forma Urbis Marmorea, 2 vols*., Roma, 1981
Stanford digital Forma Urbis Romae Project (ongoing)

Anon., *Carta del Centro Storico (incomplete), Roma*, 1985-1988

Gatti, G., *Topografia ed edilizia di Roma Antica*, Roma, 1989

Coarelli, F., *Il Foro Boario*, Roma, 1992

Coarelli, F., *Il Campo Marzio*, Roma, 1997

Steinby, M. E., *Lexicon topographicum urbis Romae, 1993 – 2000*
Manacorda, D., Crypta Balbi, Milano, 2001

Haselberger, L., *Mapping Augustan Rome*, Portsmouth, R.I., 2002

Coarelli, F., *Roma [Guida Archeologica]*, Roma, 2005

Gatti, G., *Archeologia*, Roma, 1911

Frutaz, A.P., *Le Piante di Roma, 3 vols*., Roma: 1962

Tomei, P., *L'architettura a Roma nel Quattrocento*, Roma, 1977

Benevolo, L., *Storia dell'architettura del Rinascimento*, Roma, 1980

Insolera, I., *Immagini e Realtà*, Roma, 1980

Krautheimer, R., *Rome: Profile of a City,* Princeton, 1980

Krautheimer, R., *The Rome of Alexander VII*, Princeton, 1985

Magnuson, T., *Rome in the Age of Bernini, 2 vols*. Stockholm, 1982,1986

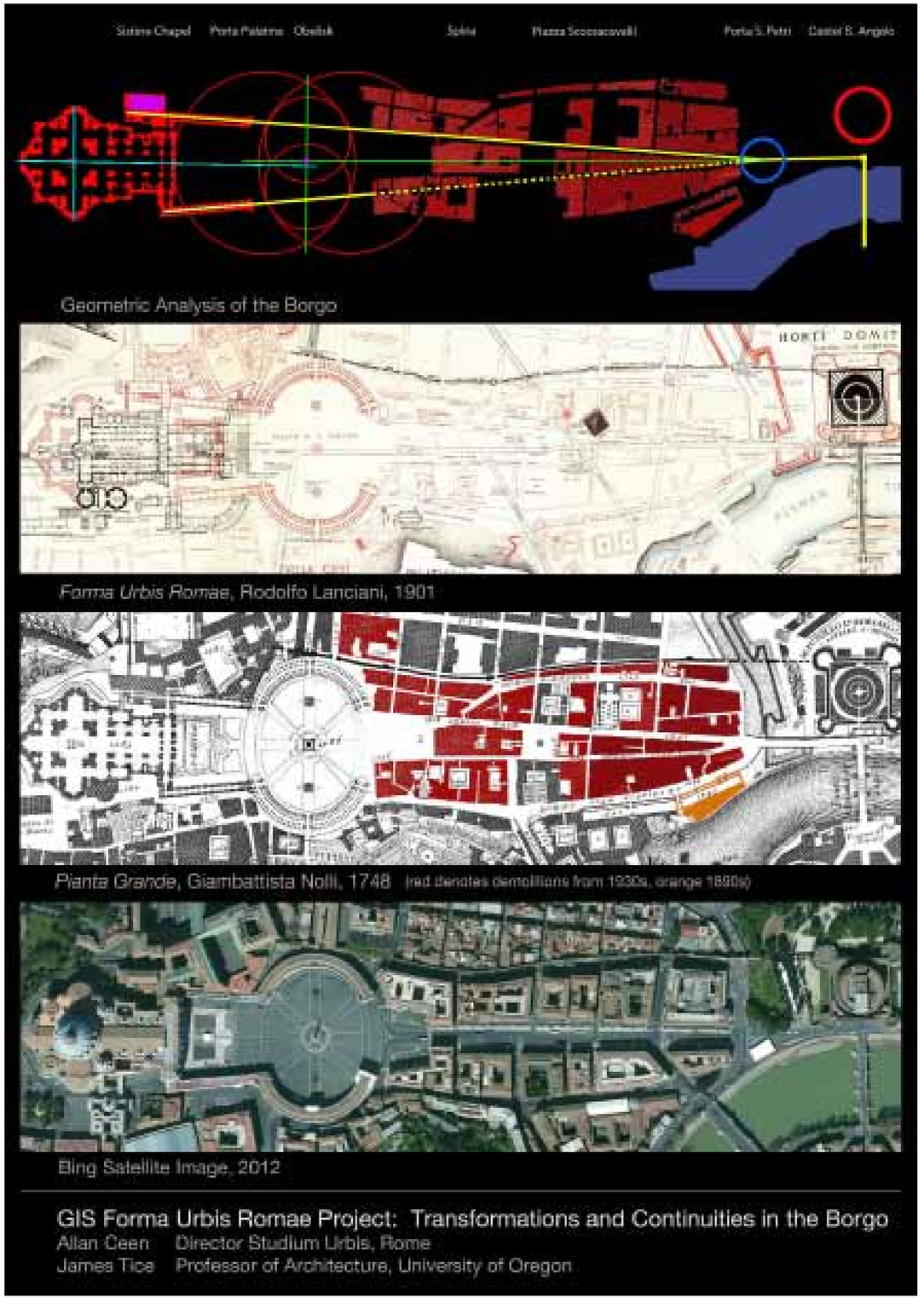
Guidoni, E., *L'urbanistica di Roma*, Roma, 1990

Ermini, L.P. ed., *Christiana Loca, 2 vols.*, Roma, 2000

Marigliani, C. ed., *Le Piante di Roma nelle collezioni private*, Roma, 2007

Legenda

GIS Forma Urbis Romae Project: Transformation and Continuities in the Borgo. From top to bottom: Urban Analysis of the Borgo; detail from Forma Urbis Romae; detail from the Pianta Grande showing modern demolitions in color; detail from Bing Satellite.



Fabrizio Toppetti
"Sapienza Università di Roma", Italy

Identity and transformation. The designing of the historical urban landscape

Heritage and city

The specific nature of the city – and in particular the historical European city and its cultural legacy – is to be found in its ongoing, inbuilt capacity to evolve. In every period of history, designing the present and the future means relating to the past and to natural circumstances, and directly or indirectly, causing them to change their meaning. It is the knowledge of how to act at the present time, in the specific case of design, which determines (or should determine) the significance of the combined historical and environmental heritage, in as much as it continuously guarantees (or should guarantee) its contemporary purposes and implications. In order that the city of the future should undergo a balanced and sustainable development, not necessarily in the sense of growth, it is essential that such a connection with history and the natural environment should be effected, beginning with the design of the new and the adaptation of the territory and its cultural legacy, and rendering them functional. For this reason we have to examine the meaning of living and building in a situation where our physical and mental spaces, invaded as they are by an unassailable past that weighs them down, also in terms of the material mass that remains, become progressively smaller, reducing us to a form of paralysis.

A city's heritage is a benefit that must be patiently provided for by means of a form of cultural design that is constantly being examined in the light of the relationship between established values and changes in their meaning. The very concept of identity is inevitably changeable. What are we referring to when we speak of identity? The not overly obscure reference is always in an inferred state of grace in some far-distant past, and therefore becomes ineffectual and impossible to re-present without recourse to further levels of interpretation, since it has no true echo in the dynamics of the present nor in the designing of the contemporary. The future of our artistic heritage, including our historic cities, lies in their incorporation – which may imply contamination and alteration and a subsequent loss of their 'special ambience' – into mutually evolving processes of transformation, both of society and the territory. The historic centres of cities cannot be considered, assessed and designed as 'islands', independent of the networks that surround them and eclipse them and change their role and their significance. The city looked at as a whole, with all its possible forms of expression, is the background to any debate on the future of the habitat. The overwhelming predominance of the 'normal' city over the 'exceptional' city is a fact of life. Nowadays the strategic priority of the European city is how to deal with the relation between the established nuclei of ancient settlement and the territories on the edge of the city, where urban spread is taking place on a vast territorial scale.

Reality and design

The historic reality of a territory is a palimpsest of traces and signs of settlement going back to its ancient topography. Urban design aimed at transformation and that aimed at preservation could ally themselves and interact with one another and find confirmation in their proper insertion into the processes of change that are happening. Studies made on the structure and the history of the city have created a specific body of knowledge about its architecture, but they have only occasionally had significant results in operational terms. Any extension of the theme with the purpose of attempting to produce more effective results requires a conception of design that goes far beyond mere protection of cities and historic territories. A balance must be struck between the expressive values of the past and contemporary values, with more importance placed on the latter; essentially, we must regard what exists as a suitable, workable starting point, and avoid thinking of whatever existed before as the only possible scenario to be preserved. In this way we start off with a viewpoint that is nothing if not contemporary, as a way of appreciating and re-evaluating the importance of the historical record. Naturally this also involves a redefining of the rules.

It also involves regarding as important the multiple nature and also the distinctiveness and uniqueness of historical urban landscapes, and, through design, attempting to give back a leading role to the elements that define them, such as the agents of transformation, working on the relationships linking the formation and growth of cities to the geographical and human context they are part of, and also on their character, their social climate, their traditions and their vital energy. It is absolutely necessary that this active interaction with history which has in the past been a feature above all of Italian design thinking, should be re-activated by an engagement in international debate.

To be able to understand the urban phenomena that have a part in the creation of city and metropolitan landscapes involves a change in our way of perceiving. It means not only examining and knowing how to analyse single aspects but to understand the connections between them. Physical space becomes subordinate to the idea of a complex, integrated environment, where symbolic, social elements become more significant in determining the consciousness of a place. Above all, in order to make a proper assessment of the phenomena, it is important to place oneself outside the traditional, reassuring distinction between what is urban and what is not; to accept the fact that landscape is continuous on a geographical scale, inside which different and contradictory elements can be seen to appear in the relations between topography, building, object, architecture, uses and place; it is important to trace this continuity in the construction of landscape also as far as regards more recent interventions that have seemingly nothing to do with 'history', and which are often cursorily dismissed as errors, and to avoid forming a relationship with the city which depicts it as a physical space that is exclusively the realm of urban theories and architectural techniques, or even worse, as a place of the imagination formed by a series of unimplemented design projects and plans. In other words, to come to terms with the city as it actually exists, and abandoning the bird's eye view from far above, to travel through it to form a sense of its rhythms and its heartbeat.

The Modern and the Contemporary

The idea that one could, by means of design – despite its own physical limitations – map out the ideal form of the city of the future, an idea that had its roots in the benchmarking suggestions of the Modern Movement, had a surprisingly prolonged existence in the years of post-war reconstruction. Its theoretical origins and its tendency towards the search for new perceptions of the city that were alternatives to the existing city and to the tendencies and demands that it generated, besides the heavy predominance of the rational and at the same the pre-representational, projective elements in modern design, have in fact led to a situation in which the plan has almost always been shown to be ineffectual and therefore incapable of dealing with the uncontrollable and outward-directed evolution and growth of the city, which is a far cry from the principles and medium term prospects that the plans and designs envisaged. The fate of the metropolis, in the wake of an unalterable economic development, is no longer in the hands of the designers, who on the one hand, learning from the radical experiences provided by the post-avant-garde of the sixties, abandoned any detailed or assiduous actions on the status quo, but on the other, by increasingly employing design projects created a posteriori, only succeeded in ratifying modifications that were already in existence. There are many reasons for this situation to have arisen, not all of them ascribable to the inflexible and abstract nature of the design projects and the institutions managing the territory. The increasingly rapid speed at which transformation of the territory have taken place, caused by the evolution of society and the need for living space that this has engendered, which was more the result of stratification and accumulation than new construction and/or replacement, has led to a condition that was difficult to foresee, but which is clearly visible today in the co-existence and mongrelisation of 'different worlds'. These processes of change have also embroiled historically well-established cities in a new form of full, hybrid urbanisation that overwhelms them, keeping their overall shape for the most part unchanged, but making them part of a larger-scale entity and profoundly altering their role and their significance. The uncontrolled expansion has created huge urban areas, distinguished by a widespread, continuous built-up zone without character, whose size can no longer be controlled by design projects. Size, as Koolhaas explains, radically changes the sense of phenomena. Since it is clear that planning and urban design no longer have the creative and redemptive importance that was a feature of an optimism towards development that is by now long gone, it is now shared opinion that planning and urban design need to concern themselves with the quality of the human habitat in existing cities.

These are cities that have expanded without principles or controls from the post-war period to today, and have special need of care, both in their historical centres that are increasingly protected, and precisely for this reason sparsely equipped to take on the 'double role', both local and global, that they are required to play on an international scene, and in the enormous territories arising from recent widespread urbanisation, where what is apparent is a need for quality in city living.

After the season of the Modern, with its ideas of design as a 'new dimension', an alternative to the existing city, architects began to follow a path that gradually led them away from abstract concepts of re-foundation. Starting with the existing city and an examination of its heritage, they are producing a new enlightened form of urban design that is built on solid cultural foundations, on pragmatic, operational choices, and above all on an explicit code of ethics, far removed from formulas and ideologies, which is able to instigate actions, both material and immaterial, that are appropriate to solving real problems, and that aim towards an effective, legitimate and sustainable transformation of the city. It has been some years now since architects and city-planners have denounced the inadequacy of zoning as an instrument of urban planning, acknowledging that subdividing a territory into homogeneous, multi-use areas is the result of a cursory, analytical conception that is incapable of addressing the multiple relationships that are needed to 'make a city'.

One way of overcoming the general crisis faced by the city, confronted by new factors due to globalisation that have changed its role and significance – something which is being experimented with in the urban policies of some major European cities – is to acknowledge the constructive role that can be played by its historical, physical and natural features, as a starting point for work on regeneration, based on criteria of the sustainability (understood in its widest and most inclusive sense) of the entire habitat inside and outside the city. The architectural community regards as an established fact the principle that the structure of the city and its territory should be seen as the result of a historical process of stratified transformation, and above all, that we need to understand fully such features if we wish to intervene effectively. There appears to be a particular need to encourage studies that can identify and organise systematically the relationships and possible synergies between two domains, the natural and the cultural, which have always been regarded as important for the city, but rarely considered separately in relation to specific, as opposed to systemic, objectives. In the European experience, the construction of ecological networks to restrict the environmental fragmentation of a territory, and restore its connectedness and permeability within the large urbanisations, has taken on aspects that are more complex than those that are strictly biological. In the reticular city that is emerging in the new urban environment, the network of communications take on a role that unites nature and culture, bringing together different resources and benefits. The efforts that are being made in many European cities, with London as a prime example, to re-think and realise the idea of 'green belts' in the new setting of the reticular city spreading across the territory, bear witness to the willingness to find new organisational ways of thinking that can connect open with closed spaces, urban with rural landscapes, with the cultural heritage, and residential with environmental requirements.

The 'designing of territory', seen as a large-scale, shared social process that can mirror the 'territorial design' of local populations has for some time now been accepted as the point of union between public interests, the assessment and make-up of benefits and the strategic alignment of policies aimed at regulating the processes of change. It involves regarding as important the multiple nature and also the distinctiveness and uniqueness of historical urban landscapes, and, through design, attempting to give back a leading role to the elements that define them, such as the explicit (and above all, implicit) agents of transformation, working on the relationships linking the formation and growth of cities to the geographical and human context they are part of, and also on their character, their social climate, their traditions and their vital energy. We need to express and give form to these themes using non-invasive technologies, and we must regard the territory in its particulars as an active 'subject' and not as a passive 'support' for any transformation. Is what is needed a 'design of the whole', or, more simply put, an unequivocal reading of the differences in scale, of the transitions between the multiple ecologies existing in the contemporary city? In other words, what is urban design?

Urban design

It may be of use to briefly summarise the principal themes that lie behind the idea of urban design, so as to pinpoint the basic features and separate them from the numerous conclusions and inclination towards tendentiousness that are a feature of different schools of thought. The evolution of the idea of urban design has passed through stages of practical application, theoretical concepts and divergent interpretations, and any investigation involves a re-reading, with the purpose of recognising its roots as a basic point of transition; It is especially useful in order to describe a 'profile' of urban design that can act incisively and effectively, and with a high degree of distinction, on the 'model-less' territories of the spreading metropolis, as it does on the compact fabric of the inner city. This implies at least the drawing up of a kind of grid where each single experience offered in different times and contexts can be placed. To adopt an extreme position, one would be perfectly valid in asserting that any quality architectural design that can have something to say in dealing with a human context, whether this be historical, well-established or quite recent, and that can make its positive actions felt in a situation that is much more wide-ranging than that provided for in the design project, independently of the scale and the level of transformation of the actions performed, then such a design would be fairly regarded as an 'urban design'.

This is a definition that is based on the conviction that we are not dealing with the type of intervention involved but with the 'approach' of the design project, especially towards an awareness of context, of the material and immaterial heritage, of the aptitude for change of a place, explicit or not. According to Manuel de Solà Morales, "urban design means taking as a starting point the geography of a given city, its needs and its implications, and by using architecture, introduce elements of language to give form to the place. Urban design means taking account of the complexity of the work to be done, rather than the rational simplification of the urban fabric. It also means working inductively, generalising what is particular, strategic, local, or productive."

After years of pre-establishing definite and definitive frameworks for entire parts of cities by means of unlimited planivolumetric plans and bird's-eye view perspective drawings, the design project began to be seen and created as an on-going process, directed and inclusive, and divulged by means of possible scenarios. Building scenarios is not the same thing as building prefigurations of the city's future, but only possible future configurations. The indeterminate features of the scenario echo the more comprehensive nature of our societies, which are increasingly more multi-ethnic, fragmented, nomadic, and less able to be described in terms of majorities. For this reason, urban design should regard the existing context as a form of genetic code, capable of foreseeing that certain conditions will change. This does not mean so much an abandoning of control as introducing different methods of control that are more flexible and geared to the evolving reality of the city, of which the design project becomes an integral part. The project as a whole, by favouring the aspects of the existing fabric, is concerned not so much with the perfection of the system that is the object of its intervention as with interacting within the whole with what already exists, starting with the theme of continuity in all the different registers, on the ecological, functional, morphological and perceptive planes.

If what is mentioned above can be described as the general guidelines of a contemporary way of urban thinking, able to take enlightened actions that have a decisive effect especially on the

existing city, it is important to draw one's attention to the fact that between the making of suggestions and forms and an effective urban transformation that is coherent and legitimate, there lies a 'no-man's land' that needs to be acknowledged and that is in need of care. To be effective, or else to be able to direct political choices and strategies and bring its activities to completion, a design project must meet at least three set requirements: to be productive as regards its objectives, feasible as regards the means and resources it brings to the field, and visible as regards the public image of the city. These requirements should be set out in a the non-deterministic manner of the radical alternative, or rather of the simple transposition of the design's previsions, in the form of a one-to-one rather than a hierarchical relationship that the project tends to establish with the plan, or rather with the planning content of the project itself.

Even if production and management procedures appear to take on forms and meanings from worlds that are far removed from architecture – or at least architecture as understood in its strictest sense – the architect should be consciously aware of this new possible space to his design project, a space that measures out the distance between the production of forms, the design recommendations, the possible special connections and pre-figurations, the routes and the practices, of an effective and plausible urban transformation. Naturally, the feasibility and thus certainly the success of a proposal for urban transformation – especially in cases where the existing fabric has an established value and a recognised role – resides in its ability to synthesise and translate into material and immaterial action the local examples that it has to liberally interpret, without exclusively concentrating on form and on whatever seems of greater moment, and instead going beyond the limitations of a design project that sees itself exclusively as an operating programme 'of response'.

Bibliografia

ANCSA, *"Carta di Gubbio"*, Gubbio 1960.

Lynch, K., *L'immagine della città*, tr. It. Marsilio, Venezia 1963.

Rossi A., *L'architettura della città*, Città Studi, Milano 1966.

Quaroni L., *La città fisica*, Laterza, Bari 1981.

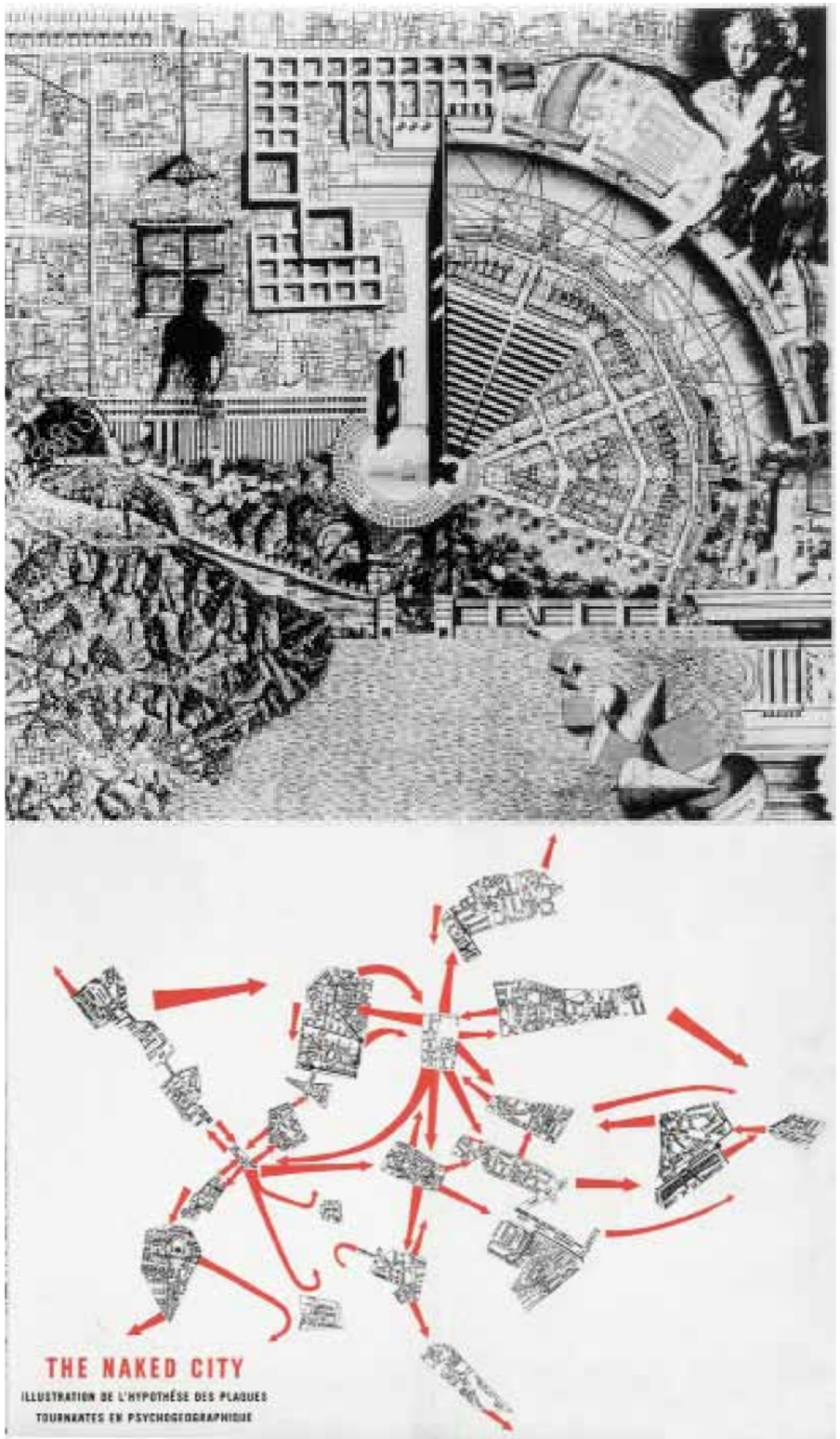
Terranova A., *Le città & i progetti. Dai centri storici ai paesaggi metropolitani*, Gangemi, Roma 1993.

Manuel de Solà, *Progettare città*, "Lotus Documents" n. 23, 1999.

Magnaghi A., *Il progetto locale*, Bollati Boringhieri, Torino 2000.

Koolhaas R., *Junkspace*, tr. It. Quodlibet, Macerata 2006.

F. Toppetti (a cura di), *Paesaggi e città storica. Teorie e politiche del progetto*, Alinea, Firenze 2011.



Yuriy Volchok
Mosca

Modern Moscow: From City Planning to City Improvement Autobiography of the Place

The resolution to materially increase the territory of the Russian capital has been made at the national government level. The aim of this long-term action is to reconsider and to restructure "the points of every-day attraction" for the city dwellers, the federal facilities location out of the city center, as well as to offer the implementation of other measures for significant improvement of the city life quality, first of all, due to traffic lines modification within Moscow.

It is quite natural that many problems arise in the course of implementation of such a mega-project. The tender for the city-panning concept of the new Moscow is expected to resolve some issues.

However, one of the greatest problems under the existing circumstances is that the Master Plan of the city is still made in terms of city-planning, as if we continue to build a new city on the "reserved" territories. But the fact is that the city has already been created for centuries, It exists and it shall be improved, providing for the modern level of every-day life quality, avoiding turning again to the extensive planning methods, Such approach to the contents of the city improvement patterns gives the real opportunity to plan the urban life in Moscow basing on the modern synergy principle: "from the existing to the emerging"…

The notions of space, time and the patterns of their co-existence in the 20th century differ greatly from that of the preceding periods. During both the previous and the current century they changed significantly and are now changing in front of us. So, what should we do to find the interrelation of the space, the place and the time perceived as the most natural in terms of the city evolution? I believe that the most promising way is to try to do it through the notion of "the autobiography of place", as it provides for the most important thing: **continuity in time**, thus giving the opportunity to restore the real meaning of the key notions making city improvement.

It is well-known that Moscow has been mentioned in chronicles since 1147. Let me draw your attention to some of the plans, most relevant for the city's autobiography[1].

The first plans of Moscow fixed in the history are referred to as "Peter's Drawing". (Picture 1) Let us have a look at the history of presentation of this plan, its "introduction into the scientific practice", as we would call it today. The scholars believe that the Peter's Drawing was made in the second half of the 1590ies, and it was presented to the scientific community in 1837 thanks to publication of "the Papers of Peter the Great's Study" stored in the Kunstkamera (cabinet of curiosities) in St.-Petersburg[2].

There is one more substantially important thread uniting the plans of the beginning of the 17th century with the properties of Moscow in the beginning of the 21th century. The author of "Sigizmund's Plan", while fixing thoroughly, inter alia, the peculiarities of the city structure and appearance of Moscow, also did his best to emphasize the features of the city structure characterizing Moscow as a European city as he managed to reveal in the reality of Moscow "general European features[3].

The plan's presentation as "a bird's-eye view" is also of great methodological importance. In such presentation we can see the *city-planning solution's projection into the space*. It is revealed to us thanks to such an approach in its spatial integrity combining in one drawing the structure of the city's "framework": its street network, the type of development, the correlation of altitudes and other relevant information which surely enriches our knowledge of the city adding one of the most important "time sections" of its historical development – the first half of the 17th century.

Why do we think that an axonometric presentation from a high point of view of Moscow's early plans is of great relevance for the comprehension of the city's autobiography till now? Especially in the course of drastic transformation of the structure and the size of the urban territory the city is currently being prepared? "**Peter's Drawing" and the succeeding plans definitely communicate the logic and the patterns of formation of the radial-and-circular structure of Moscow**.

One more imagery approach to the perception of the integrity and the type of Moscow development is dated the second half of 17th – the beginning of 18th century. In this period first panoramas appeared. There most successful creators were artists who came to Moscow with foreign missions and experts in topography. Many panoramas are close in structure and the depth of the territory "in the frame", though made by different authors. The explanation is quite evident: "the sightseeing platform" on the crest of the Vorobyevy Hills was then and remains now the best place for viewing, comprehension and picturing of the city's panorama "in general". (Picture 2)

Perhaps, at this point of analysis of the succession of the plans of Moscow we can come to one of the conclusions to which we will return repeatedly compiling the patterns of peculiarities of the city's autobiography narration – up to our days. City-improvement patterns are formed not for decades – for centuries – and reveal themselves not only in "synchronous sections" but also later. Thus, the novelties related to Peter the First's reforms had not been implemented to great extent in the second and the third decades of the 18th century and had almost no manifestations on Moscow's appearance and structure of that time, but they provided the grounds for elaboration of systematic trends in the city's development till the end of the century. The system of population settlement within the city line and on the adjacent territories also changed drastically.

In 1739 the plan of Moscow by I.F. Michurin was finished. (Picture 3) This plan has some peculiarities distinguishing it from the precious descriptions of the city. First of all, it was the fist plan of Moscow made basing on the data of a geodetic survey. At the same time the plan implements the city-planning program of the classicism epoch. It is mostly notable that it was the first plan in which the planned future is showed form the idealistic point of view. The streets are shown so straight it is impossible for Moscow: the drawing depicts the continuous build-up along major roads (in blocks in the terms of our days), which did not exist; the dashed line shows the location of Kamer-Kollezhskiy Val, which had not been built by the time.

In 1775 one more plan appeared – *the first plan for reconstruction of Moscow* – the so-called "projected plan" (related to a project, as we say now). The project component of the "projected plan" is aimed at better arrangement, straightening and widening of streets, at the catch-water drain building, establishment of trade network within the city, etc. Later on this plan was often compared from the point of view of its significance and long-run effect with the plan for reconstruction of Moscow of 1935[5].

In the 1840-50ies business activity in the city increased drastically, and the number of industrial enterprises of different scales and functions also grew. The appearance of new factories, including large ones, located as a rule along the rivers, near water and on vacated vegetable gardens also resulted in the adjustment of the planning structure of Moscow. The need in esthetically conscious, integral perception of the city characteristic of classicism decayed by that time in its plans as well as in other aspects. By 1880ies the city came up to new borderlines in the development of its city-improvement autobiography which was enhanced in Moscow up to the 1910ies. (Picture 4)

After the Russian government moved to Moscow in 1918 the city-planning purpose of the new capital changed drastically. From this point we should discuss the establishment of a new city-improvement program for Moscow, both contemporary and for the estimated future, under new social and economic conditions of the city life: it should be noted that the social composition of Muscovites was considerably changing. The number of "new citizens" who were the first generation living in the city and hindered active development of the urban culture grew profoundly. At the same time Moscow became the capital of the first state in the world with a new social order. *The notion of "new" acquired additional shades of sense. In respect city-improvement issues they are related more to qualitative changes within the borders of the established city than to the development of new territories.* On this background the notion of "plan" also acquired a new meaning in line with the essence of planned economy and the establishment of management structures abolishing the land-use traditions connected with the legal relationships which had developed for centuries basing on the private ownership.

In 1918 the architectural and planning workshop headed by the academicians of architecture I.V. Zholtovskiy and A.V. Shusev was organized under the Council of Moscow. The task set for the workshop was disarmingly specific: to develop the city-improvement plan of New Moscow. The mere title of the plan appearing to consist of customary words transformed into the system of equations with many unknown variables" "new", "plan", "the capital of the first socialist state in the world.

The city, the new plan for improvement of Moscow, along with all the aspects of the new life arrangement in the country grew in the logics and closely related regulations of the social experiment. Such drastic changes in the life perception were especially hard on the city: the dialogue of city-planning patterns developed for centuries based on radial and circular structure of city shaping and the new notions of life arrangement in the city began.

In 1918 Zholtovskiy offered the first sketch plan of New Moscow. The author of the plan focused his attention on decompaction of the city's historical center, on landscape gardening. Residential areas (in the inevitably enlarging city on the background of the growing population) should be located according to the project, on the periphery, in garden settlements. Many of the proposed novelties of the sketch draft were included into the New Moscow plan (Picture 5), the work at which was finished by the workshop in 1923 under the guidance of A.V. Shusev. They were also developed in the plan titled "Large Moscow" by engineer S.S. Shestakov, at which he worked in 1921-1925[6]. (Picture 6) That plan, as well as "Projected Plan" of 1775 before, Appeared to be a long-term one. As the time passes, its methodological advantages and integral character become more and more evident and apparent.

Both "New Moscow" and "Large Moscow" plans providing for development of vast territories, preserved radial and circular structure of the initial city-planning of Moscow. At that, the plans were made in such a way that they should not close the opportunity of substantial reconsideration of the city structure – the transformation of the introvert closed radial and circular system of planning into the opposite one – open and development-oriented.

Strictly speaking, the relationship of the closed and the open systems in city improvement became starting from the 1920ies one of the active forms of experimental modeling of social and functional structure of the new society. Perhaps, today when social relations and social and economic style of life in the country in the post-soviet period, starting from 1991 entered a new stage of global arrangement, the relationship of the closed and the open city regulation systems may appear to be a successful model for construction of new social relations.

1929 witnessed numerous discussions about the future of Moscow and the logic of its development – either traditional, evolutionary, keeping all the best and worthy, first of all – architectural monuments and other historical sites valuable from the cultural point of view, or basing on drastic transformations of the city,

The competition for the design of the Palace of Councils (Soviets), numerous stages of which took two decades, starting from 1931, makes a special subject[7]. It has not just overlapped in time with the preparation of the substantive reform of the city-improvement structure according to the Master Plan for reconstruction of Moscow of 1935[8], (Picture 7a,7b) but made the future Palace of Councils its natural integral part – the meaningful city-forming center of Moscow. For the first time in the city's history its center began to "stratify" into historically valuable and politically and administratively relevant. The plan of 1935 included along with other numerous novelties in city improvement the basics of polycentrism. Taking into account that the major program tasks related to the city framework formation integrated into the logics of that plan by V.N. Semenov, have not been implemented up to date we can view the drastic transformations offered in the Master Plan of 1971 with a resolute transfer to polycentrism as a distant result of city-improvement findings on the edge of 1920-1930ies. The ideas of the Master Plan of 1971 growing through the Master Plan of 1935 and resulting in a convincing means of co-existence of the closed and the open systems can be considered capacious and significant for the culturological point of view. N.N. Ullas proposed to compile the large Moscow with the estimated population of eight million people in eight planning areas – the central and seven peripheral, surrounding it and located along major outbound roads[9]. (Picture 8) The city-improvement design concept tried on the radial and circular structure with the possibility to transfer from the single center, the same for the whole city with the millions of population to a polycentric system with eight city centers around which sort of independent cities with one million of citizens in each should be formed. And, which is still more significant, each of the planning areas shall have its own labor application sites. Residences of Muscovites should become closer to their working places, Public centers in the planning areas should be designed to provide for the necessary conditions for the feeling of full-scale urban life. The historical center of Moscow would become not a single one but a common one which would considerably improve its status in the city's life as the reasons to visit the historical center of the capital would change. Of all the variety of functions of a geographic center, it would become a historic and cultural heritage for all citizens of the country and its visitors.

The city-improvement model of the plan of 1971 leaves behind the excessive introversion of the city contradicting an active development of the city's territory. The interior approach successfully implemented upon the perception of the city's integrity at the time of "Godunov's Drawing" and even the "Projected Plan" of 1775 could not integrate the whole large structure in two centuries, provided that all the links thereof, from traffic to administrative functions, went through the city center. The plan was not implemented to the full. Administrative, economic and merely city-improvement conditions all contradicted each other. Only several separate sites were included into the history of the city as the centers of the planning areas, But they are perceived as random and lacking city-planning regularity.

"The oncoming movement" to creative universals characteristic of Moscow Avant-garde can facilitate the formation of full-fledged concepts based on innovations (which are inevitable in this case) in the improvement of new territories attached to Moscow. In this respect the proposal by N.A. Ladovskiy to expand the borderlines of Moscow in the direction of Leningrad (St.-Petersburg) (1929-1931) is especially interesting. Ladovskiy's parabola can naturally cause the capital's development in this direction resulting in the long run in the united capital Moscow – St.-Petersburg with a linear structure. The works are currently performed on construction of a modern high-speed railway which would unite the two capitals of Russia into a single entity with a common meaning.

Few people remember that at the same time with the city-planning concept of the development of Moscow – the parabola which was, by the way, devised by it authors not only in schemes but also superposed onto the real map of Moscow Region, N.A. Ladovskiy was issued the inventor's certificate for a method of mass industrial house building based on prefabricated concrete frame with added cells - "residential cabins" manufactured at plants. (Picture 9a,9b)
In other words, Ladovskiy looked simultaneously for the answers to the questions What and Where should be built in Moscow in the long run.

Such an approach when the territorial planning and its projection into space are inseparable within a single volume and space solution for the improvement of a certain place in the city provides for formation of the creative program within the framework of the city-planning art, vital for full-fledged conscious support to the created project concept.

Yuriy Volchok
Mosca

The book *Socgorod* by N.A. Milutin is of great methodological interest from this point of view (1930)[10]. May be, thanks, first of all, to the "thesis" on general, common character, integrity of surface and space and volume design Milutin's book had a unique, almost exceptional history. The fact that up to now in is translated from Russian to different European languages proves it is in demand. Like 80 years ago, it is still relevant for theory and practice of city planning as "the guidance" **to act always in present time**. At that, the notion of "preservation" shows its basic, initial meaning: the book is still published in the 21st century, next to facsimile, thus trying to catch and to show to the modern reader "the spirit of time", the shades of its intonation, which was so meaningfully shown in its model of 1930 included into the book: album format, formatting, font, the nature and the collection of pictures. (Picture 10) Some latest publications: translation into French with the introduction by professor J-L. Cohen (2002) and translation into German with the introduction by architect D. Khmelnitzkiy (2008).

The existence of the book by Milutin both in that and in our time gives us grounds to speak of its extension, and, therefore, to give a new meaning to the notion of "contemporary".
However, today the extension of Moscow not to the North-West but to the South-West oriented at some other incentives for the prospect of the capital's development. The appearance of the first results of the competition for the planning solution for new territories will give grounds for the analysis of the new emerging city-planning conditions.

Notes

[1] Volchok Yu.P. Istoriya Moskvy v genplanah. «Moskovskiy zhurnal. Istoriya Gosudarstva Rossiyskogo». Prilozhenie. – 2011.

[2] Pamyatniki arhitektury Moskvy. Kniga I. Kreml'. Kitai-gorod. Central'nye plovadi. – M.: Iskusstvo, 1982. – P.51

[3] *Idem* – P.65

[4] *Idem* – P.139

[5] Nikulina E.G. General'niy plan 1935 goda i istoricheskaya gorodskaya tkan' / Elena Nikulina. Gorodskaya tkan': arhitektura i vremya. – M., 2011. – P.74-75

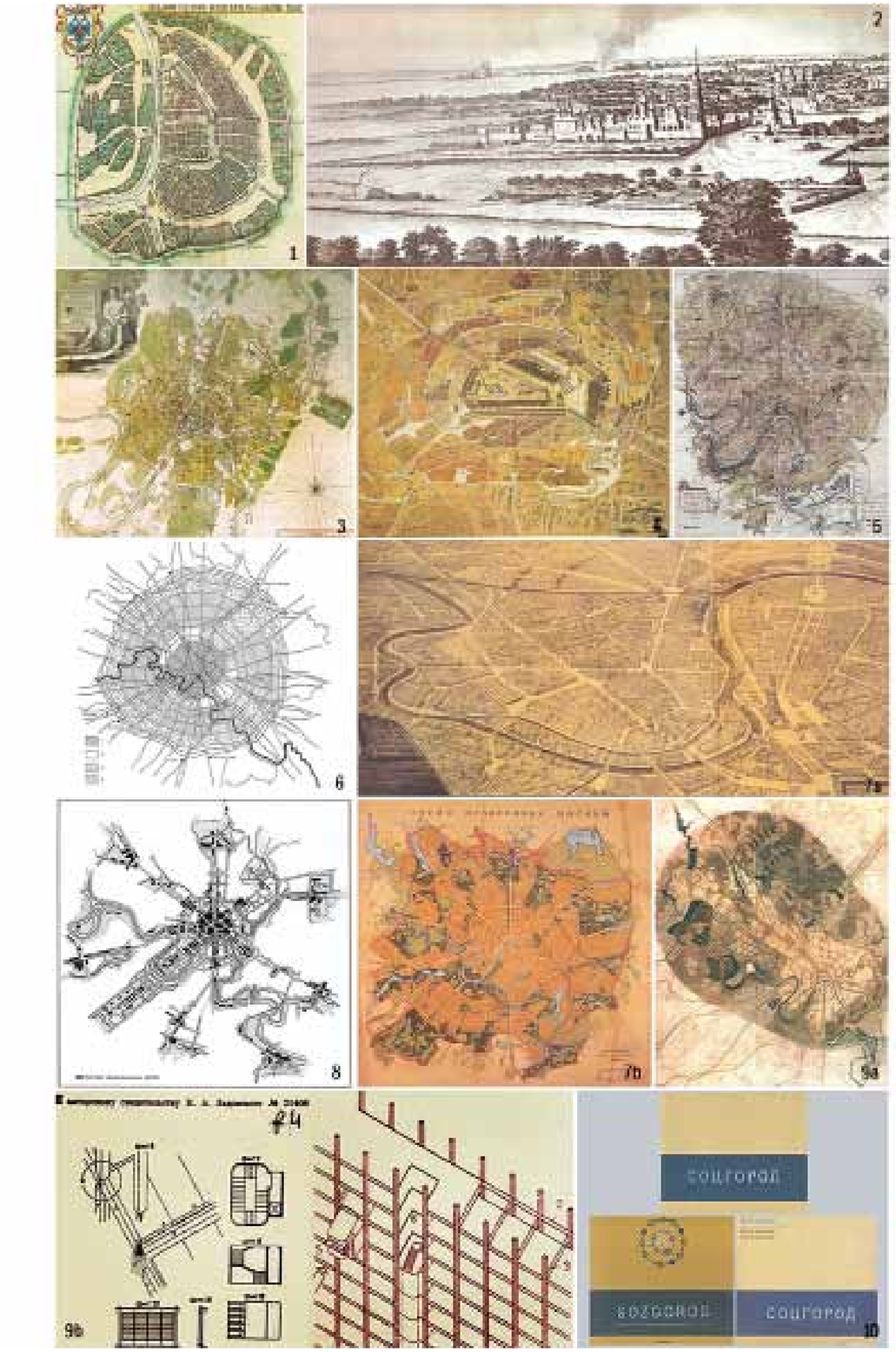
[6] Hazanova V.E. Sovetskaya arhitektura pervoy pyatiletki: problemy goroda buduvego. – M.: «Nauka», 1980-

[7] Astafyeva-Dlugach M.I., Volchok Yu.P. Stanovlenie obraza Moskvy v proektah zamyslah. / Astaf'eva-Dlugach M.I., Volchok Yu.P., Zhuravlev A.M. i dr. Moskva. – M., Stroyizdat, 1979. – P.283-349

[8] Yakovleva G. Moskva — gorod-sad 1935 goda // Arhitektura SSSR. 1989. N. 7. P.10-14

[9] Ikonnikov A.V. Arhitektura Moskvy. XX vek. – M., 1984. – P.163-168

[10] Milнutin N.A. Problemy stroitel'stva socialisticheskih gorodov. Socgorod. – M., 1930.



Sotirios Zaroulas
Politecnico di Milano, Italy

A hope for Athens

The issue of this study concerns the city of Athens and a series of projects, which from the end of World War II onwards have worked, as an alternative to the existing chaos, for the re-design and the development of the central urban areas, considering the continuity with the historic city and more precisely the continuity of the present city of Athens with the ancient city and its architecture.

Nowadays, the historic city is identified only by its survived, scattered monuments, which finished being alienated, isolated from their context and ended up to be "*increasingly unrecognizable as places of the same city*"[1]. The monuments have lost their social functions and the contemporary city has lost rapidly, during only few decades, the human scale of urban spaces. In most cases, the monuments were left in the middle of a square with the sole role of decorative element, as if they had been forgotten from another era, as if they were statues, fountains or even ornamental plants.

It is a fact that Athens and its region (the Basin of Attica), until the eighties, have been developed without an adequate planning instrument, that could prevent and control the height and the character of the buildings around the archaeological sites and guarantee the protection of the urban landscape in general. Despite the opportunities of the strategic plan of 1985 and the program of Olympic Games in 2004, the city has failed once more to revisit and upgrade the existing urban areas or to review its development and growth.

However, during all these years there have been some ideas and some projects, with the intention of resuming the relationship with the ancient city, to question what has been achieved and in the meantime study a comprehensive plan for the development of the city.

I therefore propose here the analysis of this family of projects, which share the same intentions and the same modus operandi. These projects, which have remained largely on paper, have urged the necessity for a relation with the past of the city because of the specific collective character of architecture and have proposed to re-open "*a dialogue with the ancient city and to restore to the city [...] a topography more consistent with its history [...] and to redesign the existing degraded urban fabric of Athens, a city that has escaped all control, up to become an unrecognizable urban continuum*"[2].

The continuity is to be perceived as a possible form of the present through a critical reading of the past; a renewed critical proposal of the ancient city as a dialogue of its design and its surviving monuments with the city of today.
The classification of these projects into the same group, allows us to to investigate about the common principles, the same hierarchy of values and the common understanding of the architecture of the city of Athens.
These four "Athenians" architects and their projects that constitute in a certain sense a response to the monophony of architecture of the moment are able to become an occasion for the future of the city.

They form the ground for the preparation of a new strategic plan for the city's historic center; a kind of starting point, for defining points of view and setting principles to which adhere and on which can be based the architecture of the city.
The first project to be studied is that one of Ioannis Despotopoulos for the Athens cultural center. It was in 1933, during the works of Athens Charter, when he pointed out a series of themes such as the urban problems of the city of Athens, of its expansion and what should be done in order to guarantee a less problematic growth in the course of time. He noticed that the city, as it has been developed up till now, had as result the destruction of the ancient city and the creation of a chaotic situation characterizes the contemporary one.

He was one of the first to consider the need of a green belt around the city which could be able not only to regulate the growth of the city byt even to put in order the situation of the existing historical centre.
In 1959 he was awarded the first prize for his project for the cultural centre, but only a part has ben realised. The project area is a triangle formed by Vassilissis Sofias and Vasileos Konstantinou Avenue and by Rigillis Street.

He notices also that "*[...] the squares of a city were always considered as the core of its construction and in these places were always located all their cultural functions*" [3] and that this project comes to be realised as the continuity of the ancient agora with its planning, architectural and social meaning.
The Athens Conservatory, is the only one of the buildings planned that has been constructed. Actually, it is situated in the middle of a green area and it forms a two-story rectangular volume, which is long 160 metres and covered with white marble. The inner courtyards offer not only an interchange of bright and dark areas but even a solution for the natural illumination of the central and underground rooms.
The second project studied by Kostas Biris in 1945, is part of a greater plan for the region of Basin of Attica. The project has been elaborated during a period that Athens was still a human scale city and it constitutes the realization of the ideas and theories elaborated previously by Despotopoulos, regarding the contemporary city.

It costitutes a milestone for architectural and urban history of Athens and aimed to influence the future projects for the development of the city. The reading of this plan allows us to see Biris' ideas for a business center in a location that does not coincide with this of the city center, confirming the need of an urban growth different than the monocentric one that instead the city has followed so far.

Regarding the plan for the center, he considers necessary the completion of the project that has been started in the '20s, which planned the expropriation of archaeological sites, with the creation of an archaeological park. "*The major problem of Athens urban redevelopment is that of the revealing the landscape of the ancient city. […] The government of Venizelos has istituded by law the expropriation of huge areas of the archeological sites.[…] and the American school of classical studies proceeded with the excavations of the Ancient Agora. […] The architect Panagiotis Aristofron, by his personal iniziative, managed to obtain a considerable number of properties at the west side of the city and bring to the light the ruins of Plato's Accademy […] for the completion of the project we urge the establishment of the grove of the ancient Athens*"[4].

This last one would have to form a continuous green area, circumscribed by the streets, Stadiou Arditou, Olimpeiou, Akropoleos, hills Filopappou and Nimfon, Iera Odos, Plato's Academy and Ippios Kolonos and within the limits of this area will be possible to complete the excavations and also define areas dedicated to sport and culture.

In fact, in proximity to the area of Kolonos Biris has placed a sport center and near Panathinaico stadium has thought to build a theater and generally to create an area with buildings with cultural functions.
The importance of this study is not only taking into the consideration the ancient city and the need for its design to be reemerged, but also the creation of a series of open spaces with the function of a green belt beyond which, building should not be permitted.

Five years later, Aris Konstantinidis has elaborated a project for the competition of the National Gallery of Athens and from that moment begins a series of projects for the city center.
Although all these three projects being examined here are small scale projects without the character of a greater plan, the urban structure of the city of Athens was still recognizable and even the project of a single building or a single quality project could affect the construction of the city and its development.

The project for the National Gallery in 1950 is a building with the axis perpendicular to Vassilissis Sofias street and it forms a succession of open and closed spaces: a green area, the entrance with an open courtyard to the main street and the city, a colonnade leading to the atrium with the two staircases and an enclosed square courtyard. It's apparent the will of Konstantinidis to tie the building close to the street and try to construct, in a sense, its continuity through this sequence of spaces. On the other hand, the entire design of the building declares its references to nineteenth-century museum buildings and its research to be compared with the typology and the architecture of European museums.

Thereafter, in 1952, Konstantinidis proposed the re-design of Klafthmonos square. The site of the project, that hasn't been realized, is located on one of the principal axes of the neoclassical plan. The architectural themes of the area are constituted by important buildings of the neoclassical period: the square is a vast space aligned with the historic building of the State University (it's about one of the three neoclassical buildings on Panepistimiou street that has been projected by the architect Hans Christian Hansen) and along the east side of the square are positioned the nineteenth-century house buildings, where now is located the Museum of the city of Athens.

The solution of Konstantinidis was a series of low portico constructions, arranged around the site, so as to create an enclosed square. For one of the square sides and in particular this one towards Panepistimiou street has designed a taller building. Konstantinidis has managed to control in this way the vast space of Klafthmonos square, to establish a dialogue with the neoclassical building of Hansen and with the other historic buildings on Paparegopoulou street and to resolve the problem of the slope of the site.

The third project for Constitution Square in 1957 is his last engagement with the historical center of Athens; since that year begins also his collaboration with EOT (Greek National Tourism Organisation) that will keep him busy constantly with the projects for the well-known Xenia hotels. The project involved the re-ordering of Constitution square, the square in front of the Greek parliament; it was about a slope area of two city blocks, with around the existing city that still maintained an average height of buildings, not higher than five floors and still characterized by the existence of open spaces.

Konstantinidis has imagined a paved plaza for the first block closer to the parliament with trees and some light constructions of temporary nature, one floor tall, such as cafes or structures for the leisure time. He has provided the other block with two buildings, not higher than those around the site, which would have the function of both creating a closed space and leaving open the axis in front of the parliament.

The project of Giorgio Grassi elaborated in 1996 is the most recent plan for the historic center of Athens and it concerns the re-design of the subject areas around the railway stations. The project area is located on the axis between Ceramicos and Plato's Accademy with Ippio Kolono.
The aim of the project was twofold: on the one hand to resolve the problem of the relation of the contemporary city with the ancient one and on the other to qualify the degraded urban fabric. There has been therefore an attempt to restore the legibility of the ancient topography, an arrangement of the most important routes of the ancient city and the definition of two poles: the cultural and the commercial one. The solution proposed by Grassi is distinguished by the clarity of the analysis of the development of the city in its history and its high degree of responsibility towards the city generally. Trying to give adequate answers for the future of the city means to study those moments during which the city changes, so as to understand its subsequent evolution. Grassi by a sensitive reading of the remote past of Athens presents a city that has defined its tracks in the course of time, a system of paths related to its religious and public places and buildings and the natural conformation of the ground. "*The ancient city was constituted by different locations with different functions and its peculiarity, what made it unique, was precisely their union as a whole of those places. They were connected by paths, also specialized, tracks that were an important part of the city as much as the places that connected. The form of the city, its architecture, was therefore in the monumental evidence of its places, but even in that of the paths held it unfied through the basin of Attica*"[5].

Moreover, Grassi tries in a certain sense, to enrich the architectural debate about the relation between Modern Movement and the contemporary city. This project could be considered as integration to the principles and the theories of what has been expressed before. The element called architectural history constitutes not only the continuity but even the updating of razionalism theory. While Despotopoulos and Biris had been talking about the necessity of reconsidering the ancient city and the importance of the public spaces, Grassi has amplified the whole theoretical system with the idea of architectural models and in particular those ones of the Athenian roman city.

Grassi also observes that during Roman rule, when Handrian projected Athen's expansion that had been going on outside the city, he respected its urban structure and he limited only to provide it with services. In the nineteenth century instead, when Kleanthis and Scumbert elaborated the neoclassical plan, they made the mistake that did not commit the Romans. They have thought that leaving Athens within the walls alone and building a new one outside these walls, could have helped to preserve the ancient city; the result was a new urban area, worthy of the ancient magnificence, but without having respected that complex system of its courses, even if this last one was well known. Indeed, Kostas Biris prepared the known plan for Athens mentioned above, considering the famous neoclassic triangle defined by Ermou, Piraeus and Panepistimiou streets as an error. He tried to redesign the city center and re-establish the collective memory of the city and the social meaning of its monuments through an archaeological park.

The contemporary city is still poor in public structures and the neoclassical buildings are those who still represent the public city. The buildings that Grassi has designed seem almost a tribute to the Roman method of expansion and its architecture: "*As the Roman city, the buildings first of all want to confirm and complement the idea of the ancient city. Of the contemporary one have acknowledged the level of needs, needs new and different, that means the quality and quantity of services, but neither their settlement logic, nor the constructive one*"[6].
To summarize we can say that Ioannis Despotopoulos with his project aims to restore a relation between the ancient and the modern city with the creation of public spaces and with the creation of places that could ecourage the urban life of the citizens. The influence of this project was such as to promote many projects of cultural centres throughout Greece and to estamblish the social dimension and the ideological aspect of architecture.

While the project for the modern city of Athens of Kostas Biris could be considered a milestone in the architectural and planning history of Athens. Biris is well aware that in that way, with its project manage to remedy partially the recognition of the significance of the historical places of Athens and offer an opportunity for future urban development. Konstantinidis' projects instead, deal with the historical city, but mainly try to provide the city with more open spaces and public buildings. As about the proposal

of Grassi, it seems to be a more systematic answer for what has been thought and studied before. In my opinion is the confirmation of a method: Although at first glance, to operate a project of such a theoretical consistence for the present city of Athens appears as utopia and unreal, his project actually confirms the tangibility of a theory and how this can become a reality once drawn.

Susequently, these projects, can not be ignored by those who study and plan for the historic center of Athens, but also by those who intervene generally in the historic centers. Their encumbrance, their theoretical consistence, their high degree of moral for their respect for the historical city and for the attempt to dialogue with it, impose us taking them into consideration and therefore are able to be guides for the design of the city. The common features of the four projects have been analyzed above, no matter their differences that isn't an issue I wish to pursue here, allows us to consider their familiarity to each other, the fact that they appertain to the same genealogy of projects and to proceed to a classification of them into the same project category related to the urban planning and architecture of Athens.

Notes

[1]. Grassi G., *Giorgio Grassi: Opere e progetti*, Electa, Milano, 2004

[2]. Ibid

[3]. Despotopoulos I., *The Athens cultural centre*, in «Nees Morfes», n. 1/ 1962

[4]. Μπίρης Κ., *Αι Αθήναι, από του 19ου εις τον 20ον αιώνα*, Μέλισσα, Αθήνα, 1999

[5]. Grassi G., *Giorgio Grassi: Opere e progetti*, Electa, Milano, 2004

6. Ibid

Legenda

1. The rests of the Handrian's city
2. Map of the city of Athens with the superimposition of the projects analised
3. From left to right: the Athens Conservatory of Despotopoulos, the project for the National Pinacotec of Konstantinidis and the project of Giorgio Grassi for a cultural centre

Bibliography

Cofano P., Konstantinidis D., *Aris Konstantinidis 1913-1993*, Electa, Milano, 2010

Despotopoulos I., Die ideologische *Struktur der Städte*, Akademie der Künste, Berlin, 1966

Grassi G., *Giorgio Grassi: Opere e progetti*, Electa, Milano, 2004

Konstantinidis A., *Projects and buildings Aris Konstantinidis*, Agra publications, Athens, 1981

Κουρκουτίδου Νικολαΐδου Ε., *Η θέση των μνημείων μέσα στη σύχγρονη Θεσσαλονίκη, προτάσεις για αξιοποίηση*, in «Αρχαιολογία», n. 7, 1983

Κωνσταντινίδης Α., *Για την αρχιτεκτονική*, Πανεπιστημιακές εκδόσεις Κρήτης, Ηράκλειο, 2011

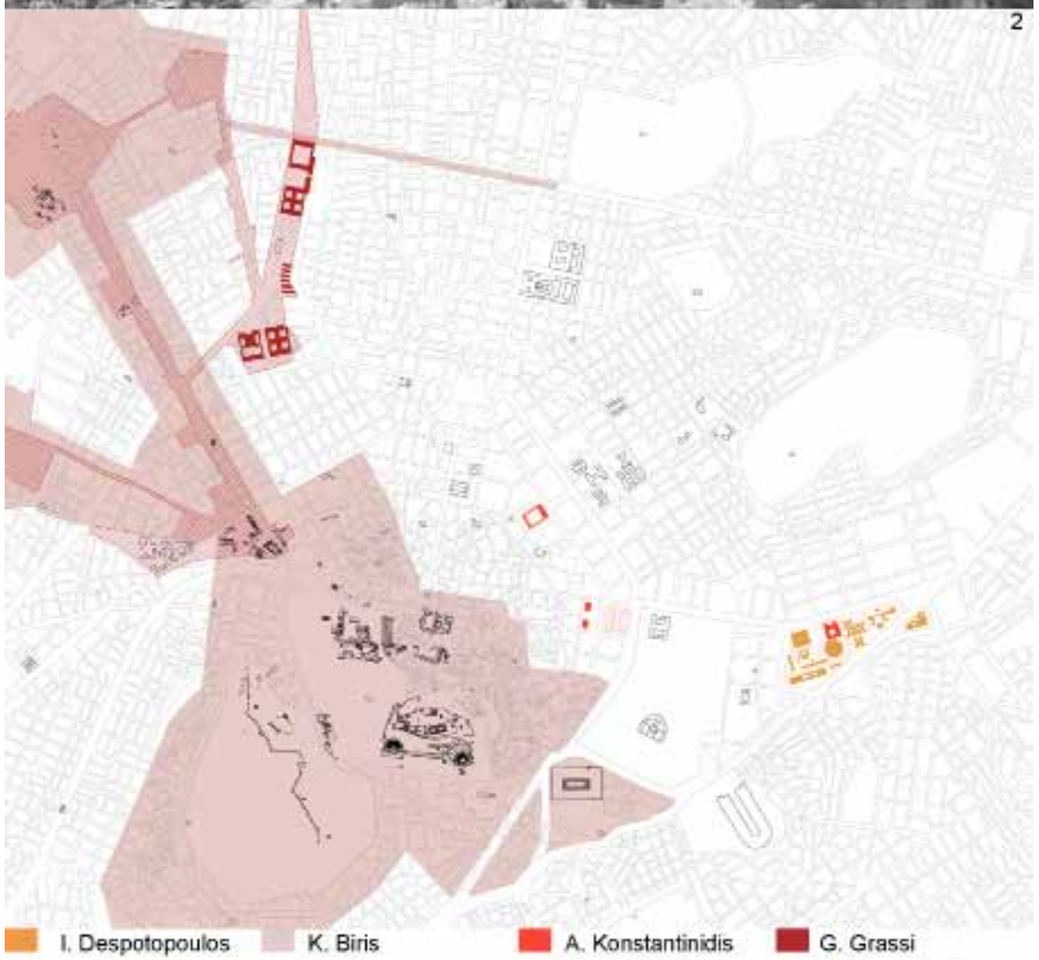
Macchi Cassia C., *Programma Heracles: dieci progetti per la citta greca*, Pergamos, Atene, 1997

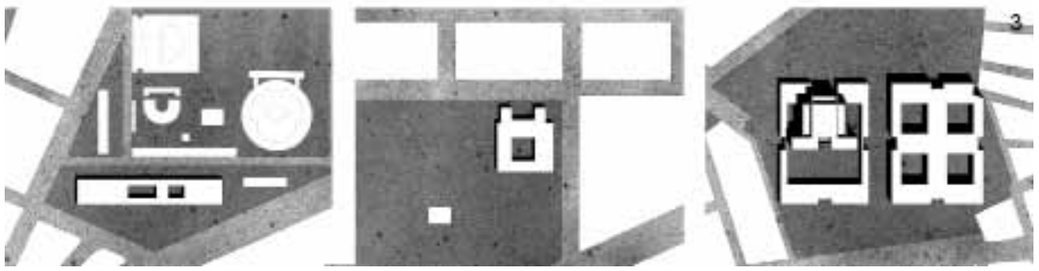
Μπίρης Κ., *Αι Αθήναι, από του 19ου εις τον 20ον αιώνα*, Μέλισσα, Αθήνα, 1999

Payne A., *Rudolf Wittkower and Architectural Principles in the Age of Modernism*, in «Journal of the Society Architectural Historians», n. 3, 1994

Rossi A., *The architecture of the city*, MIT Press, Cambridge, 1984

Φιλιππίδης Δ., *Νεοελληνική Αρχιτεκτονική*, Μέλισσα, Αθήνα, 1984





Summary / Theme 2

Oleg I. Adamov
Astrakhan State University, Russia

Astrakhan: Principles of Reconstruction of Historically-Composed Development and their Use for Planning of New Central Territories

Southern Venice of Russia
Peter the Great
Triangle of Christ, Mohammed and Buddha
Velimir Khlebnikov
Caspian Capital of Russia
Vladimir Putin

Astrakhan is a medieval city in the South of Russia located in the Delta of the Volga River on the maritime and caravan crossroads, such as the famous *Silky Route* - ancient trading canal leading from the Orient to the West. The city is situated on the islands with long hills and surrounded by thousand of rivers, steppes and semi-deserts. The Lower Volga and North Caspian Sea is a region with a unique history of urbanization and settlements creation, where the waves of various civilizations interblended (*City of mixed blood* - V. Khlebnikov) and where the significant cities were born.

The mythical Odysseus had met the tribe of *Lotophagi* on the Caspian seashore and the nowadays archeologists have discovered the graves of the legendary *Amazons* in the steppes. Among the cities, which had appeared in this region - with frequent floods and risky but fruitful agriculture - were the centers of powerful states: Itil', the capital of the *Khazar Kingdom* in the 11th century; *Sarai-Batu*, the metropolis of the Tatar-Mongol State known as the *Golden Horde* and *Hadji-Tarkhan*, the trade city described by the Arab travelers in 1334. The territory of the *Astrakhan Khanate* was annexed by troops of Ivan the Terrible in 1556. He ordered to create a Russian city and proclaimed himself the Tsar of Astrakhan, because the Astrakhan State was much older than the Muscovite one. *The strategic significance of the Volga River was well recognized by the Tsar who, during the early part of his reign secured both Kazan (conquered before) and Astrakhan for the nation, thereby ensuring that the Volga has become throughout its entire course to the Caspian a Russian river* (Gosse N., 2008). This significance should be marked and fixed by the urban planning, architectural and artistic means in the city structure.

The new city was relocated from the right to the left bank of the Volga there in 1558 the foundations of a Russian fortress were laid. Thus, 450 years ago the Kremlin became the base for the new city (Zhilkin A.A., 2008; Karabushchenko P.L., 2009, p.20-51).

Being originally a wooden fortress, the kremlin was rebuilt in stone by Muscovite city planners Mikhail Veliaminov and Dei Gubasty (Karabushchenko P.L., 2009, p.66) at the end of the 16th century according to the fortification and structural samples characteristic both for the Moscow Kremlin and for the *Castelvecchio* in Verona. The stone kremlin has actually become a citadel and a germ for the new urban matrix unfolding. The principles of the new civilization were projected onto entire surrounding areas. *By the turn of the 17th century the developing city occupied the whole of the kremlin Hill and the surrounding countryside* (Shevchenko N.V., 2008). The kremlin towered, practically soared, above the lower part of the hill and actively participated *in the process of formation into the artistic-architectonic ensemble the entire chaos of the non urbanized areas and separate monotonic masses of the wooden constructions at the periphery* (Balikhin V.S., 1935, p. 39). This contrast of the kremlin, visible from a long distance, and the masses of a low city is recognized as the *ensemble* acting in space and time, and this ensemble creation is very specific for Russian urban planning tradition. It is dealing with the large expanses of the city and tries to include and synthesize the entire urban elements into one composition (Balikhin V.S., 1935, p.39.: Meriggi M., 1998).

Nicholas Gosse - the English businessman working in Astrakhan notices peculiarity of the kremlin perception: *The first and lasting impression for most visitors to Astrakhan will be the imposing green and golden domes of the Cathedral of the Assumption, dating from 1699, and its gate belfry (1910). From its elevated position within the old Kremlin walls it is visible, as far as the eye can see, over the flat steppes and wetlands of the Lower Volga. Venturing within the impressive brick battlements you will see the smaller, older and beautifully proportioned Trinity Cathedral*. This vision is reflecting the basic structural scheme characteristic for the Russian kremlin where could be seen a triangle in plan constituted by three principal landmarks: two major cathedrals and belfry. This schematic triangulation, apprehended from the different directions, provides the orientation in the city and its periphery.

Maurizio Meriggi mentioned the distinguishing feature of the Russian kremlins and the central ensembles - a *crescendo* (growth) of the vertical elements in *contrappunto* (counterpoint) with an extension of the horizontal ones. In the ensemble of the Astrakhan kremlin the vertical elements are represented by three principal landmarks and the horizontal elements are fixed by the thick walls and seven towers. This counterpoint scheme is projected onto adjoined city parts: the White City, the Granary, the Artillery (Engineering) Yard, monasteries and convents. All these urban units were of the citadel type with the dominating central buildings and they were subordinated to the kremlin. It was like a gemmation of the initial urban matrix, but to be deprived of the fortress walls this matrix was also accepted by the various national communities - there appeared a lot of the national residential blocks or suburbs (sloboda) with low-rise housing and the cult buildings in the middle entered into the system of the city landmarks and subordinated to the kremlin: the Armenian blocks with the Cathedral of St. Peter and Paul; block of the Georgian Seminary; the Polish blocks with Roman-Catholic Cathedral; the German block with the Lutheran Kirche and gymnasium, the Tatar and Nagai blocks with Sunnite Mosques; the Persian block with Shiite Mosque etc. In the nearest steppe a Kalmyck settlement located - the *Khan-Staff* with the *Kalmyck Khurul*, and it was represented by the Kalmyck Administrative Department in the central Astrakhan (Markov A.S., Lvov S.G., 2007). Taken together these units create a sense of transparency when the city structure is grasped as actually readable.

However from the early beginning the new city was developed under the influence of tree major urban tendencies - the Eastern, the Russian and the Western - these are capriciously interwoven in its structure. All Astrakhan history is a narration of these tendencies coexistence, correlation, interpenetration and mutual borrowings.

The Russian urban tendency is represented by the *kremlin*, the *White City*, monasteries and timber huts (*izba*) and a network of the river-oriented landmarks. The landmark location is a subject of a special talk. They created a double coding system in the Russian city. From one hand the landmarks, located in the peripheral urban units, surrounded the central one and they formed together a number of the concentric oval semi-rings as if a whole ring were cut by the river. On the other hand they are situated with the regular intervals and formed the quasi-regular rows a little bit distorted within the local environmental conditions. And these rows of the landmarks intersected in two different directions to create a network with the rhombic cells. The major Cathedrals and belfries (in the case of Astrakhan also Mosques and minarets) found their position into the nodes of such a network. All system was oriented to the Volga River as the main communicative and trade waterway. The rows of the landmarks stand at obtuse angle to the riverside, and one can properly perceive their system from the water. While moving along the riverside the rows of the landmarks were converged into one figure or diverged to the separate figures as the buoys. This network can be helpful for orientation. This theory has been explained to me by the author — Vladimir T. Zaytsev (scientist and urban planner) just in Astrakhan (1987), and if it's true, it maybe useful at least for localization of the new landmarks continuing the old system as well.

The Eastern urban tendency correlates to the mosques, the caravanserais and the bazaars. It goes without saying, that the steppes near Astrakhan were crossed a million times by the *kibitkas* (tilt carts) of nomads: Mongol, Tatar, Nagai, Khalmyk, Kazakh, Kirghiz, etc. Even now one can meet the camels in the snowy steppes and on the Volga in winter. There are appeared a lot of the temporary settlements composed of yurts around the city (Markov A.S., Lvov S.G., 2007, p.188-198; Mamaev A.A., 2007, p.176-182). There exist the remnants of the old Tatar capital *Sarai-Batu* from where Astrakhan citizens took the limestone blocks for the fortress walls and building foundations. The pise huts could be still found. From the ancient times the marvels like palms or elephants were brought by the caravans to the kremlin. But the constant urban types are presented here by the White, Red, and Green Mosques, etc. They transferred the spatial prototypes from Islamic countries. For example, the Persian Mosque (1860) was a two-storeyed building with a large cupola, four small minarets, an inner central staircase, aivan and mikhrab on the first floor (Khodjiatulla R.K., 2008). It was constructed in the southern part of the central (*Parabichebugornaya*) street and marked the middle of the Persian residential block (Markov A.S., Lvov S.G., 2007, p.80-81). The caravanserai building types came to Astrakhan from India, Persia. The inns of a square form with closed yards (including source and aivan), stores inside and shops outside, open arched galleries and, so to say, "open space" floors for sleeping side by side on the carpets - their appearance was absolutely surprising because they were constructed in the very center of the city. And these units were a success because later there Armenian, Georgian and Russian coaching inns were built as some replicas and variations of such a planning type. *The Indian, Persian and Armenian trading yards provided a thriving market with Oriental goods for which merchants from many European countries came to Astrakhan (Shevchenko* N.V., 2008).

The bazaars in Astrakhan were of three kinds: the covered market of Colonial India type; the *Agoryan* (Persian) store-market for the tinware, hardware and oriental sweets retail; and so called *Isady* (*Big, Tatar, Small, Selenskye*). The last are organized at the big open places located on the riversides and are based on the supply from the water. The caravans of *Tonya* (special boats filled with water) transported a live fish, the sailing boats delivered famous watermelons, tomatoes, grape, apples and clay pots with milk, cream, butter, curds, etc. *Isady* is from a Russian verb "to put ashore" and this was the most effective bazaar with canteens at open air and special charm (Markov A.S., Lvov S.G., 2007, p.117-119).

The Western urban tendency was introduced by Peter the Great who lived in Astrakhan in 1722-1724 because of preparing a military campaign in Persia. As a matter of fact within a development of Astrakhan he wanted to cut a *new window to India*, as before it he *had cut a window to Europe* by construction the city of St. Petersburg (Markov A.S., 1994; Karabushchenko P.L., 2009, p.232-235). Peter I admired the Assumption Cathedral and exclaimed: "*There is no such a grand Cathedral in all my State*", but he was horrified by the state of the Astrakhan streets and ordered to make a pavement. Peter was inspired by the idea of Europeanization and life reorganization. Most probably he considered Amsterdam as a prototype for the city and he was an author of the idea to transform Astrakhan into Southern Venice of Russia. After the Peter's reorganization the city turned from the ancient Capital of Astrakhan State and traditional Muscovite town into a city of Empire type. The center reconstruction presupposed to make absolutely regular blocks layout like these in Amsterdam with demolition of the old buildings impeded formation of new streets. When later Catherine II ordered to work out classical plans for the main Russian cities and improve the existing ones, there was nothing to do in central Astrakhan, because the ideas of Peter I had been realized. Thus streets grid of Peter's time formed the blocks which are remained till nowadays and they became a sample for a future city planning as the urban units.

The Tsar ordered to create *Platz-Parade* Square, prison, Admiralty, Birds' Yard, Chamber of Gardens, cannels and Helling (slipway) similar to these in Amsterdam, a Baroque Roman cathedral and regular network layout. *Peter liked his out-of-town residence and every day he went upstream along the Kutum River under sail of yacht to the kremlin to be accompanied by his wife (Catherine I) and suite, where in the Governor's office he conducted the meetings* (Karabushchenko P.L., 2009, p.234). Probably, these voyages reminded him the Ditch city and he ordered to dig two cannels: the *Sckarzhinsky* cannel was necessary to connect the Admiralty with the Volga River and provide the ships' parades and water plays and so called the *Varvakis cannel* needed to drain the swamps in the Eastern part of the city and to make an artificial harbor for the ships while a stormy time. The last was completed only in 1817 by the donation of famous Greek merchant, Astrakhan noble and manufacturer Ivan A. Varvakis (Markov A.S., Lvov S.G., 2007, p.102-132). As a result the central part of Astrakhan was surrounded by the *Kutum River* and *Varvakis cannel* forming the semi-ring (like in Amsterdam). These water arteries were using as for traffic and conveyance of goods, as for recreation and sanitation of the nearest city areas. Peter directed to create the State Gardens and plant the Rhine and Hungarian sorts of grape. This plan was fulfilled by the Hungarian director of the Chamber of Gardens Ivan Parobich (invited in 1752) who surrounded the entire city with the grape plantations.

The Italian architects - Alessandro Digbi, Luiggi Rusca, Carlo Depedri - constructed the Governor's residence with galleries and exedra, belfry, trading houses and hotels. They were the city main architects and authors of the master plans. In 1769 planning laws passed to ensure that all buildings erected with White City were only in stone. *In 1798, at the time when significant architectural development in the stile of classicism began to appear in the city, county architect A. Digbi drafted a general layout of Astrakhan* (Zhilkin A.A., 2008).

The result of the major tendencies interaction was an appearance of the "hybrid" building types and urban structures. Reasonable, low-cost and efficient architectural and urban planning approaches corresponding to hot climate were developed for centuries in Astrakhan, i.e. coaching inns with open-galleries, well aired yards and rooms, deeply recessed windows or overhanging roofs providing shaded light. The Persian-type courtyards combined inner caravanserai-type organization with outer classical elevations (Adamov O.I., 2006). The *Kalmyck Khurul* receives an exedra-formed colonnade or traditional izba is extended by gallery or belvedere.

Pre-Revolutionary Russian architects having graduated from classical school (St. Petersburg Academy of Arts), accepted principles of southern architecture. Having worked with the "styles" they preserved the basis, i.e. succession in planning layouts, constructive solutions and building materials. Constructivism was treated as a natural event and as a regular "style". The houses designed by them are getting as very natural and successful interventions to the historical environment. The commune-houses (1928-1930) are built-in to layouts of coaching inns, but they are not supplied with continuous facades lines. The surfaces are turned over, loggias and balconies are arranged, and "Constructivists"-type galleries are added. In planning of residential quarters (1928-1936) housing blocks are protruded and recessed, and small front gardens appear. The facades are covered with ribbon-type glazing, and features of simplified Art Nouveau and "Proletarian Classicism" appear in decorations, i.e. simple masonry rustics, robs, relieves, decorative plastering and recessed bottle glass structure. Functional "removable" windows are supplied with accessories of the 19th century. The drawings of hand-rails and doors, forged gates and fencing mean a strict compromise of different styles. A city's electrical station (1916) is built on in a king of a concrete cage with continuous glazing structure (1933) (Adamov O.I., 2006).

For a long period we've made a lot of educational, diploma and competition projects devoted to the reconstruction of historically-composed development in Astrakhan. The examined territory is located between the kremlin and the Volga River and is called - *Kosa*. It was the most European area comprising a development of high density, 17th landing stages, granary and warehouses. *The prosperity of the late 18th and early 19th centuries is evident in the grandiose trading houses, merchant yards, banks, hotels and houses which represent a range of architectural styles: Classical Russian, Gothic, Art Deco and Art Modern* (Gosse N., 2008). The preliminary analysis comprised the schemes of the city skyline evolution (1780-1984), functional changes (1884-1984), traffic and pedestrian routes, buildings structure state and also analytical tables illustrating studies of the environmental qualities such as: variety, transparency, mul

Oleg I. Adamov
Astrakhan State University, Russia

tifunctional state and abundance, coherence and differentiation. The future extension of the city center was foreseen. The methods of the blocks hidden reconstruction, recycling, organization of the traffic regimes, skyline control and landmarks system development were proposed.

It was pointed out that the city center territories had got the mechanisms of self-development and gradual densification of blocks structure. Finally the area could be treated as a unified multifunctional complex or mono-structure. The traditional for Astrakhan building types and planning decisions can be implemented, for instance, courtyards with inner galleries, exedrae and landmarks. The previous functions - hotels, cafés and shops - are to be regenerated; churches and landing stages should be rebuilt. Some new elements are to be introduced such as passages, platforms and street-galleries.

Later the principles elaborated for historical structures were used in the project of the Lenin (Platz-Parade) Square Development and the Reconstruction of the Volga-River Side and in the project of a new district adjoining the historical center. In the last one it was proposed to create a new cannel, to retain a traditional network layout and to apply previous building types and new ones reminding tenement blocks and also southern high-rise buildings, street-galleries, passages and platforms in the yards.

The experience of historic development reconstruction is to be helpful and applicable for the city center enlargement and search for new planning and building solutions.

References:

1. Adamov O.I., *Samples and "Hybrids" of the Constructivism in Astrakhan, in Architecture and World Heritage. Heritage at Risk: Proceedings of Scientific Conference,* "Viva Star", Moscow, 2006. p.118-119.

2. Balikhin V.S., *Architecture of Working Residential Complexes of Moscow. Problem of Socialist Ensemble*, in Academy of Architecture, n.1-2, 1935, p.39-49.

3. Gosse N., "In the Eye of the Beholder". A Personal Portrait of Astrakhan, "Orbita-M", Moscow, 2008.

4. Karabushchenko P.L., Astrakhan Kingdom, "Astrakhan University", Astrakhan, 2009.

5. Khodjiatulla R.K., *Aivan as a Traditional Form in Architecture of the Central Asia*, in "Academia". Architecture and Construction, n.1, 2008, p.74-81.

6. Mamaev A.A., *Astrakhan of Velimir Khlebnicov. Documentary Story*, "Volga", Astrakhan, 2007.

7. Markov A.S., Lvov S.G., *Astrakhan in Old Postcards*, "Volga", Astrakhan, 2007.

8. Markov A.S., *Peter I and Astrakhan*, "Volga", Astrakhan, 1994.

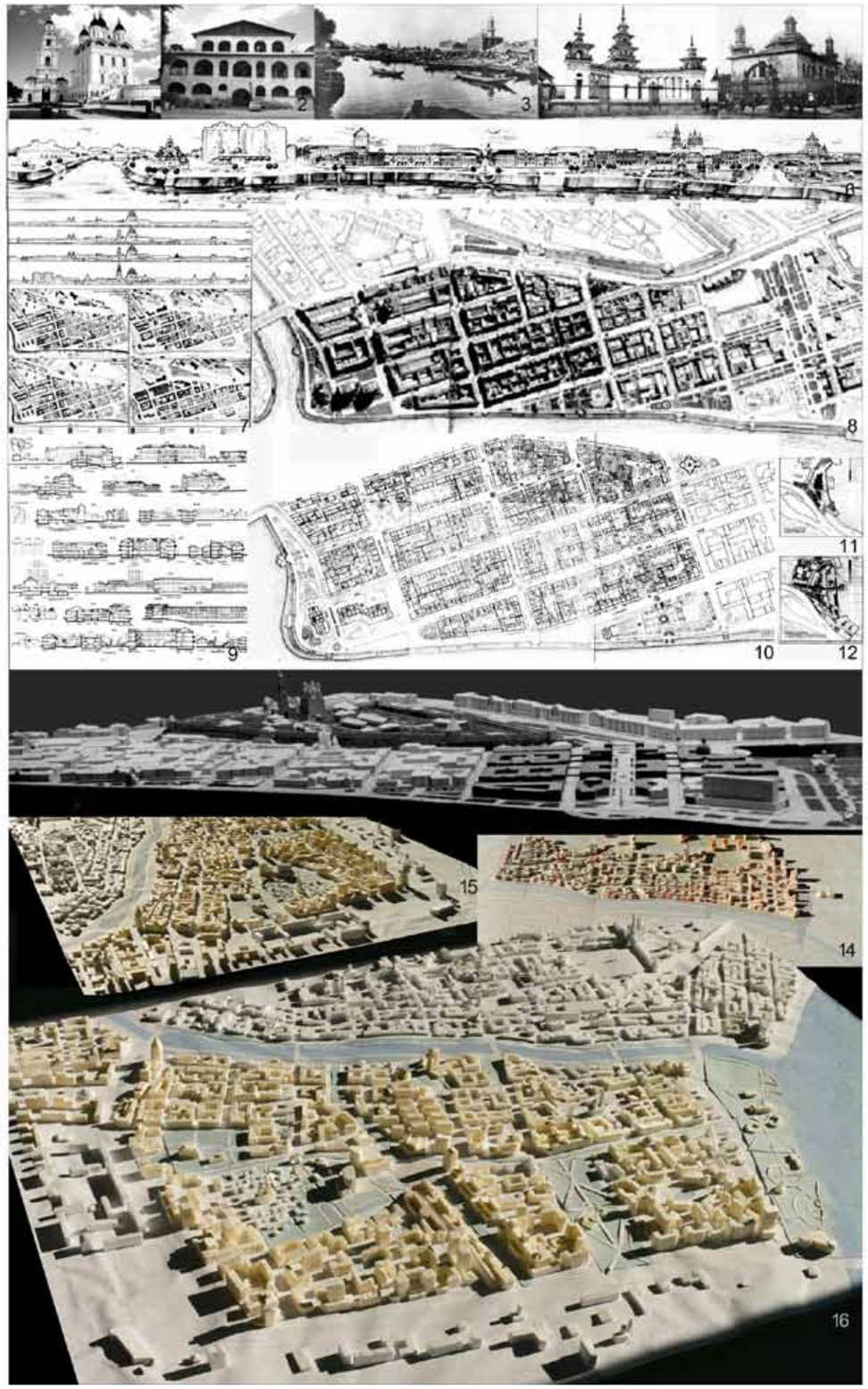
9. Meriggi M., *La città di Leonidov tra ansambl' e montaggio, in Una città possibile. Arcitetture di Ivan Leonidov 1926-1934*, a cura di O. Máčel, M. Meriggi, D. Schmidt, Ju. Volčok, Triennale/ Electa, Verona. 2007. p.38-49.

10. Shevchenko N.V., *Introduction, in Gosse N.*, op. cit., 2008.

11. Zhilkin A.A. (Governor of the Astrakhan Region), *Astrakhan – Architectural Pearl of Russia*, in Gosse N., op. cit., 2008.

Legenda:

1. The Assumption Cathedral (1699) and gate belfry (1910) in kremlin.
2. Persian coaching inn. Inner yard elevation.
3. Big Isady bazaar with the Red Mosque. Old postcard.
4. The Kalmyck Khurul (1818) with exedra-formed colonnade. Old postcard.
5. The Persian Mosque (1860). Old postcard.
6-12. Regeneration of historically-composed development in central Astrakhan. Kosa District (1984). Diploma work by O.I. Adamov, I.M. Falkovsky, supervisor V.E. Tikhonov.
6. River-side elevation.
7. Preliminary analysis. Schemes of city skyline evolution (1780-1984) and functional changes (1884-1984).
8. Kosa district. Master plan.
9. Blocks in sections.
10. Ground floor plans of blocks.
11. Central Astrakhan. Existing situation.
12. Development of Central Astrakhan. Project proposal.
13. Competition project of Lenin (Platz-Parade) Square Development and Reconstruction of Volga-River Side (1987) de-



Juan Pablo Aschner Rosselli
Los Andes University, Colombia USA

Archi-objects of desire in the information age and their future role in city positioning. Medellin, Colombia as case study

Virtual space is, in our information era, a new site for the emplacement of architecture. In virtual space buildings become detached of their immediate context, they are exposed through real or virtual images aside many others, and acquire the condition of desirable objects that gravitate before our eyes. What has been previously described evidences the growing objectification of architecture. Buildings are seen today as archi-objects of desire due to the media coverage that their appearance receives and to the inference that this media coverage has on project processes.

The notion archi-object of desire is proposed here as the manifestation in the internet of a building, no matter whether it has been built or not, and that pretends -from the exhibition of its object-like condition-, to provoke and to arouse desire. Archi-objects are architectures that from their scaled condition of objects exhibited in media, offer themselves to the world.

The archi-objects that are mentioned in this text are understood as unique productions, that result from an apparently singular creative process and that seek exhibition. While archi-objects of desire attend to laws that govern consumer goods, they aspire becoming much more than just consumer goods.

Because archi-objects privilege desire over satisfaction, their ideal emplacement is the global network and not local plots. The archi-object of desire is placed on the internet before it reaches the physical world or in parallel with its placement in the physical world; it is found in between the world from which it comes from and the world where it is heading to. That is what differentiates it from the consumer good that extinguishes or vanishes upon its acquisition and consumption.

The main utility of the archi-object is, precisely, to arouse desire. It is for this action and through this action that it affirms itself on media. This does not mean that the physical concretion of architecture behind the archi-object is unable to satisfy the common needs, determinants and variables of the discipline in the real world. Arousing desire does not surrender an object incapable of being useful in the strict sense of the word, if it has been built or if it is going to be built.

The archi-object has been mainly conceived as an object that arouses desire through media coverage. For the object to arouse desire it has to become imprinted with desire. For this impression of desire to take place, the creative process or the act of registering, distances from satisfaction as an end; or the entire process is deliberately interrupted, giving the object an unfinished quality or a sense of impossibility.

“There is always a sense that goes beyond the use of the object” (Barthes, 1966, 2). This sense beyond its use has been imprinted in the archi-object since its conception. It’s been imprinted in the experience of the archi-object that preceded the one conceived. The desire to create a desirable archi-object comes from longing other similar objects seen before. It is through this succession of linked impulses that media becomes the field of permanent dissatisfaction and vehement desires and offerings.

With the archi-object there is desire in two directions. On one hand, the object arouses desire towards itself and on the other hand it arouses desire outside itself. The desire that the archi-object arouses towards itself partially relies upon its very controlled and limited exposition (a necessary condition for a provoking exhibition). It is because of this capacity to be shown incompletely that spaces seem unclear, uncertain, unoccupied or not human. They resemble possible spaces instead of evident spaces, and they invoke something that is more than human. It is with these insinuations that each individual approaches the archi-object, generates a singular impression of it or projects upon it a certain liveliness or life style. The individual becomes co-participant of the work that he has desired.

The proliferation and multiplicity of archi-objects that coexist in the internet exposes the user to an overlapping of overexposures. The quantity of incomplete information that is thrust into the net and then offered to users determines the quality of its reception. The result of the increase of the information delivered is the reduction of the visual retention in those that consume and apprehend architecture in its staging in the virtual world. In consequence, and to attend to the new ways of seeing, architects prioritize the objectification of architecture. In media, architecture is not spatially apprehensible but can be externally perceptible. As Paul Virilio says:

The emergence of forms as volumes destined to persist as long as their materials would allow has given way to images whose duration is purely retinal (Virilio, 2000).

With the intention of raising an interest for archi-objects, their creators have paid less attention to those aspects that are virtually elusive and have destined greater effort to those perceptually comprehensible aspects related with objectiveness. More attention is dedicated, for example, to volumetric and sculpture-like expressions of buildings or to the performance of their facades. Ways of seeing determine ways of making; and ways of seeing in this information era have changed altering in its path creative processes.

Ways to project change because ways to experience change. Experience therefore affects design. But the new ways to experience can only be fully recognized when the different ways of design that succeed them have become manifest.

The current retentiveness seems inferior than before but visual appetite seems greater, conditions that modify the ways that objects communicate and therefore modify objects themselves.

The generalized manner in which architecture is disclosed, taught and learned, coherently engages with the performance of media. It is currently evident that first hand understanding of space and the comprehension of layouts, descriptions or abstractions lose importance to the exhibition and register of three dimensional objects in architecture. In order to communicate more, architecture is subtracted from its context and is presented in its objectified dimension.

In the counter where archi-objects are displayed time detains. The web presents architecture with an emplacement where buildings never grow old or suffer alterations or deformations caused by use or weathering. In this location archi-objects remain just as the creator desires them to be and as he desires others to see them. On the other hand, the context of the web is conveniently set by those that create or disclose creations. The archi-object coexists with other singular objects and this coexistence displaces the interstitial, the anodyne or the ordinary, that is in fact the surrounding physical context of a great amount of these gravitating and exclusive archi-objects.

In the sensationalism with which the archi-object is thrust to the world, in the exaltation of its singularity and originality, in the concealment of its context, in the new condition it acquires when adjoining other diverse objects, in all these phenomena, the desire that the archi-object might arouse, increases.

“From now on, urban architecture must deal with the advent of a ‘technological space-time’” (Virilio, 2000). Every archi-object is found outside its context but leads us towards its context. It invites us towards an idea of a context that has to be interpreted, completed or projected. It is in this sense that the archi-object arouses desire out of itself and towards that in which it is actually inscribed.

The city is projected in media through its most representative singularities. Pietro Barcellona says that the “abstraction of citizenship is realized in the individualism of the mass of consumers” (Barcellona 1991, 42) and adds that “the citizen of the planet does not need a “known domicile”, just necessities that must be satisfied (Barcellona 1991, 42)

Collectivism and individualism, universalism and localism coexist on the web. The archi-object tends to both individualism and collectivism because it seeks a longing human being that shares, from each dissected fragment of the world, a common emplacement on the web. On the other hand, the archi-object administers an incomplete condition of spatiality for human beings as universal subjects in a specific context.

The presence of archi-objects is inseparable from their appearance. For that reason, archi-objects are mentally stored, not with things that are experienced but with things that are seen, not with that which is consumed but with that which is desired. The archi-objects that are extracted by the mind from media share mnemonic registries with selected catalogue objects, highly recalled logos, striking graphic representations, and attractive faces, works of art or movie trailers. All the above are stimuli that arouse desire towards themselves or towards what they represent. Media is an endless provider of stimuli that in their perpetuation can supplant architectural experience. The web is the emplacement of most of the archi-objects for most of the population. It as an emplacement where architecture comes together with no apparent discrimination –apart from selection and election-. In the virtual emplacement democratization can be glimpsed, not only for common exhibition but also, and above all, for the exercise of the profession. A fair staging of architecture in the world can be foreseen.

In the global network all archi-objects can, in appearance, coexist. In this way, remote cities share a scene with metropolis, and modest interventions abut with mega projects. In fact, and because of the vehement demands for novelty, marginal environments make desirable contributions to media. In the centripetal inclusive action of the web, the eccentric becomes centric. Archi-objects seek to transcend globalization while they consolidate it.

To distinguish one city from another, to discern its attributes when emplaced in the web, the consolidation of desirable stimuli that cooperate becomes necessary. Each city conceives for itself a cohesive identity that is made of a logo, a slogan, an advertising strategy and a collection of cultural objects that include, of course, the monuments of the past and the archi-objects of the present. The city must arouse desire in potential visitors longing to visit it, rest in it, invest in it or work in it but not remain in it. In this order of ideas, the conception of archi-objects demands marketing strategies as natural parks, endemic species or typical dishes do. Archi-objects, like handicrafts, appeal to the vehement awakening of affective craving.

The sculpture-like modeling of archi-objects increases and decreases; exceeds or is controlled, according to the pressure or depressurization of the economy. Economy is what truly insufflates or deflates the desire that leads to consumerism.

To possess an archi-object of desire is as important for cities as it is for a museum to have a memorable painting. For both the archi-object and the painting the same principles that fixate things or phenomena in memory apply. It is known that human beings, in general, are inclined to visit or become acquainted not with the unknown but rather with what is endorsed by consensus. It is following this principle that the same cities and the same museums are still being intensely visited by those who want to see the same monuments and the same works of art. But every now and then a new work of art emerges, a new archi-object mediated by the web and by an unexpected consensus. This approved new work is quickly fixated in collective memory as a new fetish.

Fetish architecture, however, should be provided with a certain material or symbolic incompleteness that detonates imagination, mystery and desire. That is the case of the pyramids, the Parthenon or the Eiffel tower; or should be elemental and yet complex, simple but convincing. A work called to encourage must denote a collectivity with certain individualism. The Guggenheim is the architectural fetish of recent years. It is not necessary to be thorough in order to remember, in general terms, the singular object-like condition of this building emplaced in media; and together with the surname, the last name is frequently recalled: Bilbao, which is the city that engendered it. The city acquired a memorable and profitable archi-object of desire. *The consumer society promotes the narcissistic election of the object. This election favors in turn the isolation of individuals* (Barcellona 1991, 42).

Contemporary cities are requiring architects to conceive archi-objects of desire instead of spaces. Visibility is privileged as a force that promotes attraction and cohesion within a collectivity. Architects cooperate with these new requirements to perform in the city because they also desire visibility and because this is a great way to extend a political and social veil upon the artistic conception of archi-objects. Cities long for unique works, in which they can also participate as co-authors, since they have commissioned architects something outside mass production. The act of commission, already extinct in the other arts, delivers the individual or collective client with an alter-ego.

To conceive and care for an archi-object of desire requires as much imagination from the architect as it does from the collectivity that longs for it. It is because of this longing and projection that the work becomes a collective act and therefore a cultural act.

Colombia has also surrendered to media. Medellin, second city in importance in Colombia, leads a national tendency towards a cultural emplacement on the web. Medellin is committed to the conquest of media and has a tendency to proudly exhibit its archi-objects. This is fortunately solving media coverage imbalances that take place within a markedly centralist country. Medellin has wanted to differentiate itself from the capital city by aesthetic means, as generally occurs in the history of tense brotherhoods, as can be exemplified by physical contrasts between architecture in Barcelona and Madrid, Porto and Lisbon, Graz and Vienna or between Guadalajara and Mexico City. In all of the above, architecture and creation in general plays an important role in the positioning of a city and in the statement of difference.

Archi-objects efficiently procure a forwarded appearance to a city, prompting the user to see it as a cosmopolitan city. Being cosmopolite implies having cosmopolite architecture or architecture that seems at home anywhere, that is to say, architecture whose emplacement in global media seems natural. Architecture of this sort must be attractive and inviting, refreshing as a coca-cola commercial, youthful, gay, playful and toyish.

The adjectives playful and toyish may well qualify the conditions and propensities found in recent archi-objects. That architecture can be playful and toyish is a demonstration of how things that enter our mind through vision -in so far as objects of desire-, stimulate and incite emotions that during childhood are occupied by a world of toys that come to life with media. The word toy, used as a verb, is defined as flirting or to dally amorously. That is what archi-objects do, in a very positive way, when they perform in media. Current generations have grown up with advertising stimuli that use the uncertain and enhanced appearance of things and in particular of toys, to awaken desire.

It is during childhood that a toyful attitude towards the world of desirables is fixed. This attitude relies less upon experience and more upon media. That is why the most popular archi-objects today are also the most childlike in appearance, using the word in an affirmative sense that refers to what is innocent, frank, candid and inoffensive as well as joyful, enthusiast and astounding. In occasions the most childlike objects awaken greater enthusiasm and affection than others; that is the case of the recently proposed archi-objects for Medellin and that have been received with great enthusiasm by the local and international community.

The archi-object Public Library of Spain in Medellin won the prize as best building 2004-2006 in the VI Latin American Architecture and Urbanism Biennale, has been recognized as best architecture in America in the Pan-American Biennale in Quito, received the Lápiz de Acero prize as the best architecture in Colombia and was declared the best project of 2009 by the visitors of the Plataforma Arquitectura site that reports an average of 8 thousand visitors per month.

It wasn’t necessary for juries or web visitors to experience the building or to note its current material state in order to desire it. It is a beautiful and playful toy that offers an amazing social contribution. The material condition of the building and its experience move to the background and the archi-object that gravitates timelessly on media is enhanced.

Juan Pablo Aschner Rosselli
Los Andes University, Colombia USA

Dubai is the current sand box of the world; its contemporary playground. It is the site for the most daring toys and playful objects to formalize. Both Dubai and Bilbao are examples of how fetish archi-objects can serve a community through the invocation of disciplinary cult and the attraction of tourists. These are models that are partially taken into account by many other cities including Medellin. But in this last case, archi-objects are conceived not only to be seen by the world but also to be approved by a community and to serve specific social causes.

Archi-objects of desire are motives for pride and cohesion, because of the singularity and optimism they irradiate and the civic integration they promote. Surprising as may be, autonomous conceptions such as archi-objects can become physical symbols of a participatory model that brings together public administrations, citizens and architects as performers or interpreters of emotional longings of a collectivity.

The archi-objects that come from Medellin compress, in their shapes and appearance, social and cultural densities. Because part of a circumstantial and contextual halo accompanies their emplacement on media, the city is tacitly present and represented by them and the archi-objects, on the other hand, are empowered by the collectivity. An object so charged by the hint of its origin must certainly highlight in a virtual emplacement. The word Medellin adjectives the virtues of the archi-objects that represent it.

Archi-objects, fetish as they are, are not everyday architectures, utensil-architectures or ordinary constructions. Conventional or neutral architecture that is forged by means of experience and repetition is utensil-architecture. A good spoon, for example, beyond its appearance must be a good spoon and serve to transport liquids into the mouth. But an archi-object, when compared with a spoon, is more and is less than a utensil. A spoon that resembles an archi-object would be the type of spoon that due to its attributes ends up exhibited in a wall instead of serving its basic purpose. That is why archi-objects, no matter if they serve a basic purpose or not, are so comfortably emplaced in media, promoting a sense of pride and well-being in the communities and architects that conceive them.

Medellin is a revitalized city partially due to an important amount of archi-objects, the result of successful alliances between administrations with initiatives and architects with ideas. Medellin has sufficient toys to move inhabitants and visitors to a playful and joyous mood –in opposition to the solemn and sometimes somber state that Bogota has to offer-.

It is through play and desire that the emotional connection between archi-objects and human beings cements. And whatever brings this emotions into life must bring about hope into the world because enjoyment is an affirmative condition of creative actions. Architecture is currently playing and media is its stage.

Bibliography

Barcellona P., *Los sujetos y las normas*, en Olivas E. y otros, *Problemas de legitimación en el estado social* (pp. 29-48), Madrid, Trotta, 1991.

Barthes R., *Semantics of the Object, in Barthes R., The Semiotic Challenge* (pp. 179-190), Los Angeles, University of California Press, 1994.

Jauss H. R., *Aesthetic experience and literary hermeneutic*. Minneapolis, University of Minnesota, 1982.

Virilio P., *The Overexposed City, in Hays K. M., Architecture Theory since 1968* (pp. 542-550). Cambridge MA, The MIT Press, 2000.

Leonard R. Bachman
University of Houston, Texas USA

Cybertown: Another Façade of the Postindustrial City

"A universe that displays local phenomena built on nonlocal reality is the only sort of world consistent with known facts..." (Bohm 1980)[1]

Introduction: local sympmtoms, global interactions

Common architectural expressions of the emerging postindustrial era usually involve rustbelt iconography, urban restoration, and economic revitalization. The larger manifestations are, however, more epochal than adaptive reuse. Indeed, more profound urban transformations were portended many years ago. Thus, the more fundamental questions we must turn to are not about urban renewal or virtual architecture. As worthy as those projects are, they only responding to superficial representations. Instead we must anchor back to the underlying postindustrial forces. Evidence suggests that those forces involve separation of local scale symptomatic perceptions from systemic global interactions. This ultimately mandates a new appreciation of design complexity. The City is not a machine; it is an organism.

As early as 1915, Patrick Geddes and Lewis Mumford foresaw postindustrial change as the beginning of a "neotechnic" civilization that would succeed eotechnic (preindustrial) and paleotechnic (industrial) society. The most salient features of their neotechnic vision were large scale relation and long term sustainability. Half a century later Daniel Bell published *The Coming of Post-industrial Society* (1973), documenting transitions from manufactured goods to cybernetic bases of value production (Table 1). Today, these forces are at the systemic root of our Cities in Transformation.[2]

Table 1 Techne: Ideals and Means of Production as a Story about Civilization

Geddes 1915	Mumford 1934	Bell 1974
EOTECHNIC- (life in balance) Geddes apparently did not use this term, but Mumford credits him for its use and meaning	EOTECHNIC- 1000 AD to 1700- village life, coal and steel, the clock as a model of capitalism and the laudable search for an intensification of life	PREINDUSTRIAL- Agriculture and mining for raw materials as the basis of production
PALEOTECHNIC- (life threatened) private dispensation of resources for individual gain	PALEOTECHNIC- 1700 to 1900- industrial cities and the megalopolis, problem solving for profit rather than a search for general principles	INDUSTRIAL- Conversion of raw materials to goods and the continual consumption of those goods, practical know-how dominates, productive labor is primary
NEOTECHNIC or EUTECHNIC- (life resurgent) public conservation of resources toward future evolution of the public good	NEOTECHNIC- 1900 to about 1934 and forward- organic human scale living, electricity and automation free up labor, innovation, science, communication and information are primary concerns	POSTINDUSTRIAL- Information as currency, data as empirical reality, knowledge as decision making, stochastic forecasting, codification of theoretical knowledge, primacy of human capital, growth of intellectual technology

Source: Bachman, L. R. (2012)[6]

There are many important questions in this theme of postindustrial transformation and design complexity: How do urban environments unify the local and the global? Can we transform our industrial machine age city to a new postindustrial knowledge city? How do we remove the blinders of immediate apparent phenomenological effect to see more than how things appear to our imperfect physical perception and a-priori knowledge? How might architects embrace cybernetic complexity in place of mechanistic reduction? And finally then, how should architects frame immediate emotive affect against the noumeal force of foresightful intelligent effect?

Questions of reduction and complexity have been haltingly encountered in architecture. Those encounters have sometimes danced into convergences; and that resolution ultimately involves a full embrace of complexity. Those traces are increasingly distinct in the postindustrial city.

Nonlocality in physics, architecture, aesthetics, and cognition

Global is obviously different from Local, and not only in scope and scale. The connectedness and complexity aspects of the Global are what is radical, not the simple matter of piling up size. So it isn't merely the small versus the grand, or the near versus the far scope of issues that are involved, but rather our differentiation of local and "nonlocal" realities. We can appreciate this distinction as the difference between a machine and an organism. A local phenomenon is like a machine: just a piling on of replaceable and reducible parts. A nonlocal organism is a system of self-organizing and self-regulating relations that are vitalized by flows of entropy, information, interaction, environmental stimulus, and continuous adaptation. Furthermore, a machine is just a grocery list of ingredients while a system is a recipe on the order of DNA coding. To adapt the Latin roots, complicated (plic) means tangled piles and complex (plex) means woven tapestries. The City must be complex.[4]

The late theoretical physicist David Bohm (1917-1992) established cosmological distinctions between local and nonlocal modes as "implicate and explicate" order. His nonlocality, as an elaboration of Werner Heisenberg's Uncertainty Principle, has even been described as the most important scientific discovery of the 20th Century. This concept also relates to complexity and chaos theory as the difference between the human need for smooth, regular and predictable circumstances in contrast to nature's rough, irregular, and dynamic behavior. Smooth things match our local scale of perception in a Newtonian world. Rough interactions of global cosmology are beyond immediate human comprehension.

In quantum physics today, nonlocality refers to the direct and instantaneous influence of objects on each other across distances, even intergalactic distances. In architecture this difference is manifest, on one hand, by local, immediate, and direct physical perception of the environment (physical phenomena) versus, on the other hand, nonlocal abstract foresight (strategic reality). This framework of subjective human perception versus underlying reality also aligns with Immanuel Kant's noumea/phenomena and with Karl Popper's depiction of Three Worlds: reality, subjective experience, and intersubjective constructs. In other words, our direct immediate sensual experience of architecture as physical Affect is made whole by foresightful intelligent consideration of strategic Effect. Effect and Affect are also bound together in aesthetic philosophy where our human intervention connects them. Aesthetics is the bridge; and design is the bridging.[5]

"Aesthetics conveys the interdependence of our appreciation [affect] and our understanding [effect]." (Roger Scruton, 1979)[6]

"The ontological function of the beautiful is to bridge the chasm between the real [effect] and the ideal [affect]." (Hans Georg Gadamer, 1960)[7]

Both the aesthetic bridge and the design bridging involve complex weaving of tandem forces. In human cognition, the affect/effect duality is a complicated model of the human brain right and left hemispheres of affect and effect; while Bohm's implicate-whole is a tapestry of the coherent and animated human mind. Note also that sublime transformation of the human brain organ into the conscious human mind is unquestionably a function of complex animation driven by self-organization and self-regulation. Without such vital animation the brain is just another organ and the body is just a Frankenstein like machine.[8]

The aesthetic bridge between physical affect and strategic effect is thus what constitutes the indeterminate and complex act of design. Physical appreciation or strategic foresight are both necessary, but not independently sufficient. The ultimate postindustrial city will necessarily incorporate the animating complexity of whole-minded, systemic design thinking. The isolated silos of physical affect and strategic effect that have divided architecture and urban thinking for so long are but obsolete hindrances. Cities in transformation must be complex.

Geddes, Mumford, and Bell marked out civilization's eras of Preindustrial Trade, Industrial Factory, and Postindustrial Knowledge. We are now beginning to witness the industrial rust belt dystopian collapse. What comes next is a turn to transformations that ennoble and embody deeper human intelligence. At the urban dimension, that transformation manifests the global/nonlocal scale interrelations that are at the root of sustainability, cybernetics, and complexity. As the saying goes, "There is no such place as Away." Everything is connected; everything is nonlocality; and you must reap all that you sow.

Encounters with complexity: wicked, messy, ordered, and natural

Architects have encountered this complexity in a number of ways that have mostly gone unrecognized and underappreciated. Figure 1 depicts parallel timelines across the literature for early complexity science and along four separate veins of complexity in architecture.[9]

So Chapter One of that untold history of architecture vis-à-vis our ever growing understanding of how the world really works can be framed as a series of four architectural encounters with complexity. It is quite possible in these formative encounters to grasp the slow dance between design thinking and the recognition of architecture as a fully complex enterprise. For the City however, the results have heretofore been stubbornly mechanistic and reductive. For so long as local scale symptomatic outcomes were allowed to engender architectural value on their own merit, the underlying systemic complexities could be ignored. Consequently, the symptoms were solved but the global interactions were unrecognized.

The first and most inherent encounter is with Natural Complexity. For architects, the relation of buildings and cities to biological and ecological soundness has usually been given an important but not significant role. Organic architecture for example had had much more to do with materiality and harmony with the landscape than with the systemic characteristics of real organisms. Several subthemes can be identified within this encounter:

- Ecology
- Flow
- Morphogenesis
- Synergy
- Gestalt

The second encounter captures indeterminate aspects of design as expressed in architecture: wicked problems. Figure 1 and Table 2 serve to recognize some of the main sources.

Architecture generally attributes its dealings with indeterminate wickedness to the intuitive talents of the designer. In fact, a more accurate understanding of complexity illuminates the relation of design thinking to architectural production. In the City for example, these elements of Wicked Complexity are what separate its formal configuration from its strategic infrastructure. Connecting configuration and infrastructure would thus involve the following factors:

- Bounded human rationality
- Wicked indeterminate problems
- Societal complexity
- Knowledge production

The third encounter is that of Ordered Complexity. In a normative sense, ordered complexity is often understood as building programming and urban planning. At its lowest form, this is often trivialized as "predesign." In a critical sense then, the idea of such planning must be reformulated. What we take for space lists and adjacency diagrams should be transformed into a search for teleological urge and unique essence. The role of planning should be rethought as a continuous process of strategic design that complements physical design throughout the progress of any project. The complexity of this more authentic and substantial role is illustrated by the following:

- Unique essence
- Stakeholder collaboration
- Scenario planning

Messy complexity completes this first chapter of architecture vis-à-vis the systems basis of reality. In this encounter of the fourth kind, architects have grappled with the simultaneity of order versus spontaneity. Again, look at the City illustrates this complex overlay: at once ordered and manageable, but still changing, emerging, and unpredictable; homogenous yet heterogeneous. Within that overlay we observe the following themes:

- Inclusive whole
- Authentic fit
- Patterns

Table 2. Complexity science and four modes of complexity as encountered by architecture

	SCIENTIFIC	WICKED	MESSY	ORDERED	NATURAL
PROPONENTS	Ackoff, Arnhof, Churchman	Simon, Rittel, Bell	Jacobs, Venturi, Alexander	Pena, Sanoff, Preiser	Geddes, Kepes, Olgyay
POST-WAR LANDMARKS	1957	1957	1961	1965	1963
REALM	Cosmology	Society	Culture	Institution	Organisms
OBJECTIVE	Adaptation	Intelligence	Spontaneity	Essence	Responsive
ORGANIZATION	Dynamic	Cybernetic	Organic	Collaborative	Holistic
ORDER	Interactive	Managed	Authentic	Discovered	Emergent
PROBLEM	Evolve	Bounded rationality	Identity	Reduce data	Flow
AGENTS	Systems	Decision Makers	Citizens	Stakeholders	Systems
APPLICATION	Behaviour	Organization	Urban	Definition	Design

Source: Bachman 2012

Converging into complexity: cybernetics, dynamics, value, and growth

Figure 2a diagrams four architectural convergences into complexity as a timeline of significant publications. Some parallel events in the literature of complexity science are also shown.

From Encounter to Convergence

This second chapter on complexity and urban transformation traces the gradual convergence of architecture into increasingly complex and systemic design approaches. The prominent signposts are found in cybernetic animation, macro-scale planning, social equity, and ecological flows.

Cities in Transformation are cities in convergence. The uptake of systems thinking and complex operations is not just an incremental step on the path from less sophisticated to more profound. The differences in architecture are not just a matter of enhanced exploration and production. Rather, the emergent processes are themselves transformative. So from wicked problems and bounded human cognition, we move to superhuman cybernetic intelligence. From solutions in isolation we move to interconnected and interactive matrices of flow, information, material, and pattern. From cost and profit, we move to human capital, investment, and social equity. And finally, from a linear consumer economy of production, use, and disposal; we close the loop with sustainable cycles of ecological harmony. These can be discussed individually.

From Bounded Rationality to Computer Cybernetics

The first section of this second chapter on complex transformation concerns the advent of digital technology. This event has certainly liberated and empowered architectural design explorations. More importantly however, cybernetics has reconnected the architect's visionary ambitions with the corollary realization of built artifacts. Indeterminate structures are, for example, no longer the challenge they were to long span, thin shell, or other multivariate engineering problems. The vision and the reality are much closer together.

Again, cybernetic intelligence is not just the automation of manual trial-and-error iteration or rote calculation. Rather, the digital age of architecture vitalizes knowledge based decision making, validation of intuition, virtual exploration, what-if and push-pull sensitivity analysis and a host of other opportunities that obliterate the limits of human cognition. As the $1000 laptop doubles in capability every couple years, there is every indication that a 2030 model computer will have thousands of times the computing power of the complex human brain. By the year 2050 the same $1000 will likely buy a computer with the combined intelligence of the human race. What we know today as Building Information Modeling, Integrated Practice, Evidence Based Design, Continuous Commissioning, Post-Occupancy Evaluation, and Performance Simulation are only faint foreshadowing of what is to come. The complex City must be cybernetic. The citizen will expect it and the architect will deliver.

From Local Perception to Global Dynamics: Symptoms Give Way to Connections

We conduct our behavior in a Newtonian reality of first order cause-and-effect. Our senses continually filter reality in imperfect and incomplete ways. Ultimately, this abbreviated representation is what allows our learned heuristic patterns of observation and reaction to function well in our daily interactions with everyday circumstances. But as already discussed, the World

Leonard R. Bachman
University of Houston, Texas USA

and the City are part of our cosmic network of interconnected, non-linear, and non-local systems. Physical phenomena are insufficient.

At the local level of human perception then, we do not have to examine the biological metabolism of a snake when we step on it; we know without contemplation to move away fast. We do not, in everyday life, have to calculate the likelihood of a quantum anomaly with every step we take; we can trust the ground will react with equal and opposite reaction to our footfall. When dealing with deeply interrelated and dynamic problems of complex order however, smooth Newtonian physics, learned heuristics, intuition, and other local scales of perception do not suffice. We must think in the global scale of interconnected cause-effect chains that ripple out in waves of probability and uncertainty. We must think at the systemic level of information and adaptive feedback loops. The City must be a dynamic and adaptive organism.

Cost Meets Long Term Value: Profit Is No Longer the Best Measure of Success
"The ancient social function of the architect, I have argued, was to produce buildings of power and taste for people of power and taste. This is still the function of the sector of intellectually dominant architects.
The networks I have described acted and still act as a primary mechanism." (Stevens, 1999: 212)[10]

The industrial plowshares of profit are themselves being relegated to the rustbelt scrapheap. The consumer economy is being displaced by an economy of strategic investment. Now, just as psychology has evolved in the last ten years from a negative position of treating the disordered to a positive one that recognizes how healthy individuals can also benefit from the study of well-being, so too is architecture changing. Notions of design cost and extravagance and physical refinement are being replaced by ideals of value production and long term investment.

Consumption Meets Environmental Limits: From Vicious Throughput to Virtuous Cycles.
Growth and progress in the postindustrial city must be ever more elegant. In place of linear resource consumption, product obsolescence, and final disposal, we now look to systems of organized flow that will close the loop and cycle everything back into a total ecology. Fuel, energy, transportation, water, refuse, storm water, sewer, communications, green space, hardscape, recreation, and all the other systems of the postindustrial city will not only be channeled and strategized, they will also be integrated and interactive. The local will be linked to the non-local. The architect will fashion the bridge.

Our encounter with natural complexity has taken hold. The pioneer's preindustrial assumption of nature as an infinite means of production, and the industrialist's attitude of nature as both the productive resource and waste dump are essentially over. Of course we did not quit using stones at the end of the Stone Age, and neither will we cease all goods manufacturing at this juncture into postindustrial society; but the City must become a regenerative place of authentic healing and real growth.

Conclusion
The City is, after all, a tree. Architecture is, after all, a bridge. Only the organic complexity of self-regulating and self-organizing systems will suffice for the postindustrial city; and only an embrace of that complexity will suffice for the postindustrial architect. As the local and non-local interactions of the city's adaptive systems work in virtuous cycles of flow and closure; so must the architect operate in connective visions between the Ideal and the Real. A hermeneutic and abductive embrace of complexity is required. A search for the teleological essence is prerequisite. The vital animation of the City is upon us; and the aesthetic bridge spans between the real and the ideal. We must design the bridge.

Figure 2b illustrates the models of industrial and postindustrial design in architecture as mechanistic silos versus tandem forces of the whole. In all the ages of architecture and the built environment of the city, physical design was given ultimate value and strategic design was presumed as a matter of course. As such, physical design was the core activity and all the strategic aspects were relegated the place of minor moons orbiting the great core. In postindustrial architecture, the only thing that counts as design is that which "displays local phenomena built on nonlocal reality" (Bohm 1980). In the postindustrial city, design is the bridge between the physical and the strategic, between immediacy and foresight, and between the ideal and the real.[11]

Bibliography

Bachman, L. R., T*wo spheres: physical and strategic design in architecture*, London, Routledge, 2012.

Bell, D., *The coming of post-industrial society; a venture in social forecasting*, New York, Basic Books, 1973.

Bell, J. S., *On the Einsstein Podolsky Rosen Paradox*, In <<Physics>> v.1, 195-200, 1964.

Bohm, D., *Wholeness and the implicate order*. London, Boston, Routledge & Kegan Paul, 1980.

Gadamer, H. G., *The relevance of the beautiful and other essays*. Cambridge [Cambridgeshire], New York, Cambridge University Press, 1986.

Geddes, Patrick Sir, *Cities in evolution: an introduction to the town planning movement and to the study of civics*, London, Williams, 1915.

Kelso, J. A. S., *Dynamic patterns: the self-organization of brain and behavior*, Boston, MIT Press, 1995.
Mumford, L. A., *Technics and civilization*, New York, Harcourt Brace, 1934.

Novak, F.G., *Lewis Mumford and Patrick Geddes: The correspondence*, London, New York, Routledge, 1995.

Scruton, R., *The aesthetics of architecture*, Methuen, 1979.

Rzevski, G., *"Using complexity science framework and multi-agent technology in design"*, in K. Alexiou, J. Johnson and Zamenopoulos T. (eds.), *Embracing complexity in design*, London, Routledge, 2009.

Stevens, G., *The favored circle: The social foundations of architectural distinction*, Cambridge, MA, MIT Press, 1999.

Legends

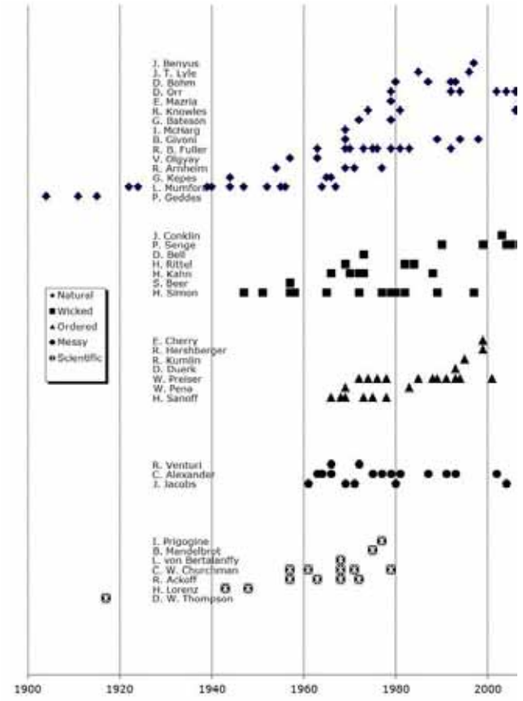
Fig. 1 Timeline of the four architectural encounters with complexity (Source: Bachman, 2012)

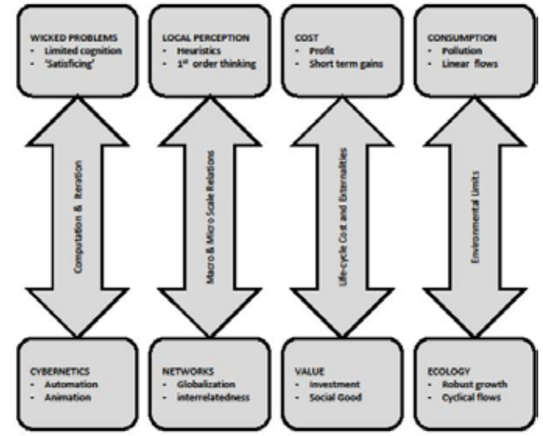
Fig. 2a Architecture and four convergences with complexity (Source: Bachman, 2012)

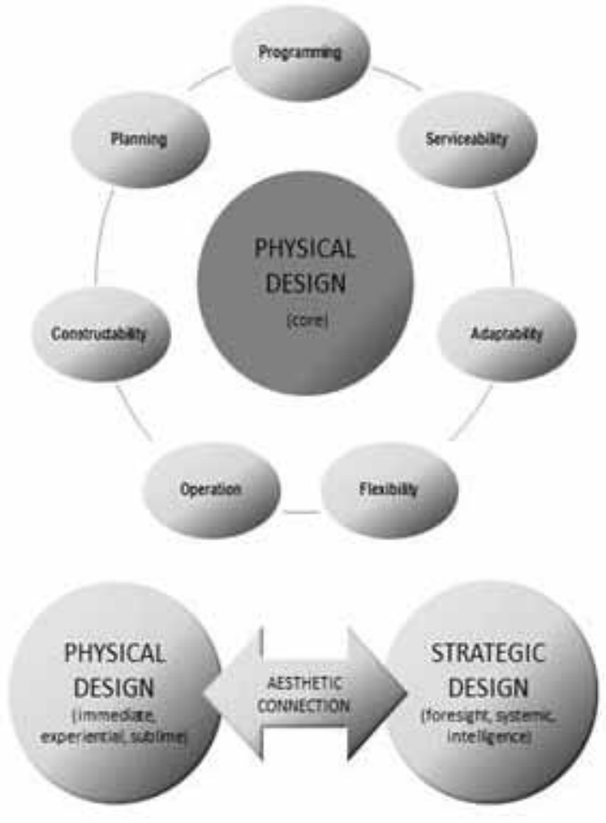
Fig.2b. Industrial and postindustrial models of architecture (Source Bachman, 2012)

Notes

[1] Bohm 1980
[2] Geddes 1915 and Mumford 1934 (for more on their collaboration, see Novak 1995); D. Bell 1973
[3] Bachman 2012
[4] Bohm 1980; Rzevski 2009
[5] J. S. Bell 1964
[6] Scrutton 1979
[7] Gadamer 1960
[8] Kelso
[9] Bachman 2012
[10] Stevens 1999
[11] Bohm 1980







Nicolai Bo Andersen
The Royal Danish Academy of Fine Arts, Denmark

In search of a modus operandi for a specific urban architecture.

A critical approach to the collective amnesia of urban design.

It could be argued that contemporary architecture and urban design is characterized by an individualistic and object-focused self-sufficiency. That the architect makes a great effort in creating variation, conceive sensational facades and spectacular building forms. That the tendency goes towards more and more disjointed diversity, less and less connective qualities. It seems that only a few architects are interested in the issue of the (town) house in a broader context, as an urban issue – or for that matter in a smaller scale, from a bodily and human perspective. The architect seems more interested in fabricating objects than in building cities.
19th century classicism in northern Europe had an understanding of the city as a coherent, homogenous unity that by means of plastic expression, colours, proportions and textural qualities of the individual buildings was able to generate harmonious connections to the city on the one hand, and at the same time to appear with an accommodating, human scale and material intimacy in the details.
Today's fragmented, disjointed and complex city does not allow for a similar connectiveness and urban unity. New functions, new materials and new political, economical and aesthetic standards do not allow for the same unity as the classicist city – a unity perhaps not even desirable?

This paper argues, that the architect – by placing space and its phenomenological qualities as the nucleus of architecture and urban design - can evolve a sensitivity of an architecture able to make new connections and relations, concrete as well as mental. The spatial qualities of a central part of Copenhagen are investigated through a phenomenological/hermeneutic approach, trying to extract some distinctive properties of the classicist city. A survey strategy that unfolds a phenomenological 'field of properties' is used to approach a method for developing an architecture not characterized by typologies or images, but rather by the emotional qualities expressed through the concrete constituents of space. The intention is to point out the possibility of a new urban connectiveness, another kind of 'unity'. Gernot Böhmes concept of 'atmosphere' is used as a starting point to discuss the space and its phenomenological properties as pivotal in understanding the city as comprised of not one, but manifold sensuous experiential orders, which are not forming unities in a classical sense, but able locally to create smaller, specific connections.

This paper investigates by the design of a specific architectural project a method to identify, document and transform the characteristic and phenomenological qualities of a place, a city, a building into a new situation. It is argued that the architect by the use of a 'phenomenological survey' of the existing city can distil a 'field of properties' that can be used as generator in the transformation of the city. It is pointed out, that a nuanced and specific understanding of architecture and urban space can restore the human body and the sensuous quality of space as the standard for urban transformation.

City

Walking the streets of Copenhagen, especially one central part of the city always puts me in a certain mood. Coming from Holmens Kanal, a broad noisy road of with a lot of traffic where most of the cars are just passing through on their way to a destination far away – I turn left into a narrow street and suddenly the whole atmosphere changes. The space is narrow, the houses are smaller, and the streets are almost quiet.

The streets winds almost unnoticeable and the distant sight are disrupted by the winding row of facades. The absence of one single focal point and the suggestion of multiple patterns of movement almost give the feeling of a labyrinth and the slightly twisted street pattern gives the space a character of intimacy. Even if one can almost get the feeling of getting lost, the sense of multiple crossing spaces gives a comforting quality to the space, and it triggers the curiosity. The bevelled corners of each house at the junction of the streets create small, intimate spaces, a brief pause in the flow of the city.

The narrow streets makes the facades appear close. The subtle pattern of the lime plaster and lime washed surfaces gives a comforting, almost inviting feeling, recognizable to the body and the human scale. The mat, grainy texture of the walls makes you want to touch the house physically and gives the building a strong physical presence. The subtle relief of the facades creates a nuanced composition of light and shadows. Combined with the cool grey and warm grey nuances of the walls the buildings are experienced as a little reserved, but dignified.

There is a calm, almost serene feeling to the space. The houses are charged by a quiet presence, an almost contemplative mood. As silent characters in the city, shoulder by shoulder they express a relaxed dignity, individual, yet parts of the same community. The empty streets and the quietness give a feeling of abandonment, an atmosphere of melancholy. But at the same time, an atmosphere filled with expectancy – a feeling that makes you curious of what to find around the next corner.

Atmosphere

Gernot Böhme calls the spatial character we experience through our bodily presence 'atmosphere'. (1) An object is present in a certain way through physical articulation and it makes its presence perceivable through the senses of the human body. Atmosphere is connected to neither just the object nor the spectator. In that sense, the atmosphere is the intangible 'something' between a physical object and the body, it belongs to the interstice. It relies on the interaction between the articulated object and the sensing human body. The perceived atmosphere affects the nervous system in a specific way, setting the spectator in a certain mood. So the atmosphere has to do with relations. It has to do with both the articulation of a physical object as of how the space is experienced by the human body.

Böhme suggests that the atmosphere of a space can be constituted through 'orientation, suggestions of movement (and) markings' creating 'concentrations, directions, configurations in space.' (2) Böhme does not, however, give any specific instructions on how to actually create an atmosphere, how to articulate a specific object in order to obtain a certain character. It is as if the term stays in a very general and abstract sphere. But since we can see and experience powerful spaces, build by concrete materials – glass, stone, concrete, bricks, steel – it must be possible to extract what is actually generating the atmosphere, and how to work with it as an architect.

We are as architects interested in the 'how' of atmosphere: how can we create a specific atmosphere, how can we articulate the elements that constitute it, how can we work with them as an integral part of the design process and how can we maybe develop a method for the future transformation of the city?

The Danish architect Carl Petersen opens his lecture at The Royal Danish Academy in 1919 by stating: 'in forming arts, to which mainly the art of building and the art of sculpting belongs, four conditions are especially important: form, colour, proportion and texture.' (3) If we accept, that these four conditions as a starting point can be used to describe the constituents of space, the making of atmosphere could be described as the specific way form, colour, proportion and texture are combined making the object present in space in a certain way, sensed through the human body and evoking an emotional response on the subject.

Steen Eiler Rasmussen describes precisely how we, through the whole of our upbringing, attain a nuanced, bodily understanding of the world – how we since our childhood 'through a number of experiences learn ... to asset objects according to gravity, hardness, surface character, thermal conductivity.' (4) The properties hard and soft, light and heavy, weak and tight as well as the material properties of the surface, give us through the sensuous system of the body an emotional effect. That means, that not only geometry but materials on their own, all the way through to the molecular level, can help create a certain atmosphere through the way we experience space.

The architect puts the individual materials together in a specific order in order to achieve a certain effect. The plastic qualities of a building can give the impression of gravity or lightness; the geometrical relations can evolve an experience of movement or balance. The repetition of a single element can give the impression of tranquillity, whereas shift in geometry seems dynamic. A sequence of houses or an individual facade can be experienced as rhythmical. The contour of a building can through memory provoke a strong associative power.

But the experience of space is not static. The human body moves through space and experiences the phenomena from an endless number of positions, from multiple viewpoints. Or rather: the atmosphere is not static. It relies on the temperature of the air, the quality of the light and the sounds in the street. If it is raining or it is a warm summer day. And it is different from person to person. The experience of a space through bodily presence is not constant. The dynamic character of atmosphere suggests that we should talk of not one, but manifold experiential orders. Of a limitless number of sensuous experiences, an endless number of atmospheres.

Phenomenological survey

The question is: how can we as practicing architects create atmospheres? Is it possible to extent the notion of experienced space as the nucleolus of architecture and urban design into an operational design method, a modus operandi? How can we make the atmosphere operational in the future transformation of the city, allowing new interventions to have connective qualities, concrete as well as mental?

Maybe we can learn from the classicist city, relearning what many contemporary projects seem to have forgotten. Or rather: maybe we can learn – not from the image or typological qualities of classicist architecture, but from the phenomenological properties of the city – from the ability of each individual house to participate in a larger, urban conversation – and at a smaller, human scale to create an intimate and welcoming atmosphere drawing on the emotional qualities of architecture.

By photographing the distinctive building elements of the inner city of Copenhagen, a number of phenomenological properties of the classicist city can be pointed out (image a). Nine different building elements are ordered in a phenomenological 'field of properties'. The description is not necessarily historical or technical exhaustive, but it relies on each element's ability to be a part of creating a specific spatial character:

Contour - the vague contour marks the individuality of each house.
Shift - the shift of the cornice makes a dynamic transition between the buildings.
Palette - the palette of white chalk and soft earth colours gives the city a serene character.
Profile - the cornice profile makes a precise transition between the space of the street and the house.
Relief - the subtle relief makes a nuanced composition of light and shadow.
Plasticity - the subtle twist in the street and bevelled corners articulates the plastic qualities of the city.
Rhythm - the repetitive composition of windows gives a rhythmic feeling.
Frame - the framing of windows points out the transition between outside and inside.
Pattern - the delicate pattern on the base gives the house a tactile quality.

The 'phenomenological survey' points out a number of distinctive building elements constituting the character of the building, articulating the facade, and thus the space of the street and of the city. The elements refer to form, colour, proportion and texture of the buildings, and make a central contribution to the manifestation of the atmosphere.

House

The project for a house in the city (image b) is an investigation of how the phenomenological qualities found in the individual classicist building and the ensemble of buildings in an urban scale can be transformed into a contemporary understanding and operational method - a modus operandi - of urban transformation. The 'phenomenological survey' distilling a 'field of properties' of the classicist city becomes a toolbox to design a new, imaginary part of the city. The project is not an attempt to make an exact copy of a classicist building or to restore a historic part of the city; neither should it be understood as a sentimental wish to go back to the good old days. Rather it could be argued that the connective properties of the atmosphere of the classicist city describes a prospective understanding of history and building culture as well as a critical potential in relation to the amnesia of modern architecture and urban design.

The project is made up of one single image. It has been constructed as a wireframe model and rendered by the computer. Plans, sections and facades only exist as part of the three-dimensional model. The house has been generated not as architects would normally work, starting with a general plan in the town scale, working through the building as volume towards a more and more detailed design. Rather, the space is rendered from eyelevel - seen from the street - as a single spatial situation using the specific 'field of properties' identified in the 'phenomenological survey'.
One could say, that the properties found in the classicist city were disassembled and put back together again in a new order in an attempt to develop a design of a building not as an object, but rather as an urban situation with a specific spatial atmosphere, a re-assemblage of found properties.

The individual elements have been interpreted in material and proportion. The house is intended to be build using a simple, modern concrete element technique, insulated and rendered with lime plaster. The base is tiled with white fibre concrete elements with a subtle horizontal relief, an outwards going joint, creating a simple, ornamental pattern at ground level. The frames of the windows and the cornices both at the base and by the roof are made of white fibre concrete elements. Window- and doorframes are made of brass, obtaining its patina from the touch of hands.

The subtle winding in the street and the bevelled corners align the buildings with a distinct plastic property, giving a fine contour to the row of buildings. The heavy base makes the building seem to stand solid on the ground and the pattern gives the building a human scale and an inviting gesture. The profile of the cornice makes a characteristic shift to the quiet facade ordered with rhythmically repeated windows. The extruded frames around each window and the position of the window frame give a subtle relief in the facade resulting in an overall impression of quiet presence.

The building engages in dialogue with the neighbouring buildings in several ways. The profile of the individual house makes a visual connection to the neighbour, the window elements form a rhythmic configuration along the street, nuances of colours from the same palette creates a local similarity in the city and details from different houses are establishing connections across the street.

The building is placed in an imaginary setting (which is not quite in accordance with the aim of working specific) almost giving the image the quality of a memory. Almost as if fragmented images from the city was found in the back of the head and put back together in a new order, leaving the spectator uncertain if the image is a remembrance of an actual place or an image of a new, not yet existing situation. The dreamy atmosphere makes the spectator uncertain if it is an existing structure or if it is new.

The space has an ambiguous quality. It oscillates between comforting recognisability and hesitating uncertainty. It might at first glace look like a familiar part of the city, and yet there is something strange about it. It is very different – and at the same time very much the same, creating a mental connection to the existing city. The image holds a melancholic atmosphere and

yet a feeling of expectancy. Almost like an image of remembrance brought back to consciousness by a special atmosphere.

Cities in transformation
Obviously, a simple image has some heavy limitations. To fully experience the sensuous qualities of space the sound, the smell and the tactile qualities of the house should be present, not only the visual qualities. The visual representation is in that sense inadequate to fully unfold the experience of space. Moreover, the imaginary setting excludes a large number of local qualities and limits the number of specific spatial constituents. To really feel the atmosphere of a space, the house should be designed to a specific site and built in reality.

Nevertheless, it is quite clear that by defining the space and the notion of atmosphere as pivotal in architecture and urban design, we can point out several things: first of all we are able to define the phenomenological aspects – the bodily, sensuous experience – as central to the understanding of architecture. Space and the notion of atmosphere should be seen not just as the result, but as an integral part of the design process. In architecture, it is not just the individual buildings, drawing solely on visual qualities, but the complex, sensuous experience and emotional qualities that define the city.

Secondly, we get closer to an understanding of the constituting parts of the space – the form, colour, proportion and texture – as well as their internal, syntactic relations. We can make the experienced qualities operational through a 'phenomenological survey', distilling constituting elements of an existing part of the city into a 'field of properties' and we can use them as a toolbox to make an imaginary transformation of the city. We can start working specifically and nuanced, focusing on the relations of the constituting parts that create the space of the city, instead of just the individual objects.

Thirdly, it becomes clear, that the space and the spatial atmosphere can be activated to establish connections and new, local orders. In the relation of the individual building to the city on the one hand and of the house to the human scale on the other, it is the experienced space that holds the connective possibilities, concrete as well as mental. The notion of atmosphere allows for manifold sensuous experiential orders, which are not forming unities in a classical sense, but able locally to create smaller, specific connections. The manifold of atmospheres points to a modus operandi of less object - more city.

Finally it is obvious, that every city, every site, every space is different and in order to achieve a heterogeneous and complex city, one must work nuanced and specific. By focusing on spatial character – the multiple sensuous experiences and emotional qualities of the city – we can be able to work with a nuanced and specific understanding of architecture and urban space, and be able to restore the human body and the sensuous character of the space as the standard for the future transformation of cities.

Notes:

1. Böhme G., *Atmospheres: The Connection between Music and Architecture beyond Physics*, in Metamorph. 9. International Architecture Exhibition, Focus, Venice, 2004.

2. Böhme G., *Atmosphere as the Subject Matter of Architecture*, in Ursprung P., red: Herzog & de Meuron: *Natural History*, Lars Müller Publishers, Montreal, 2002/2005, p. 405.

3. Petersen C., *Stoflige virkninger, in Harlang C., Kristensen P.T., Müller A., red: Arkitektursyn, Kunstakademiets Arkitektskole*, Copenhagen, 2009, p. 119.

4. Rasmussen S.E., *Experiencing architecture*, Chapman & Hall Ltd., London, 1964, p. 18.

Pellegrino Bonaretti
Politecnico di Milano, Department of Architectural Design, School of Civil Architecture

What is the role of architecture in the contemporary city?

Structure and form of the design of the city. The case of Milan

1. Space and time, context and model

It is far from erroneous to say that a significant part of the "culture of architects", especially that which conforms to international standards, has been ready to accept from so-called postmodernism the renunciation of the critical responsibility of architecture in the processes of urban transformation. A sacrifice amply compensated by the media success of the big names in the field. *The stunning spectacle of the architectural object* has taken the place of *historical awareness and civil responsibility* in the construction of the city. In other words: the apologia of the present (*the future is already here!*) propagated by the presumed objectivity of the architectural object in which any choice of a general order is banned, claims the right to push aside the art of the *polis*, the *politiké* of the ancient philosophers that formed the basis of occidental culture through the identification of *city* and *politics*.

Employing a not dissimilar logic, over the last two decades various disciplines have investigated the city – *the big city* – as a universe of great complexity, with the aim of describing the multiplicity of actions and effects in processes of transformation. Economists, sociologists, anthropologists, geographers, philosophers, psychologists, as well as architects and urbanists, having agreed on the impossibility of a general model of interpretation, have legitimized the ungovernability of the phenomenon of the metropolis in the age of globalization, on an epistemological plane, while these studies have generally viewed urban space essentially as a cognitive category to be grasped only by means of metaphor (ex: *porosity, imprint, patchwork, puzzle*[1]) or analogy (the interpretative models of systems of high energy dissipation).

What has been mostly lacking is a focus on the concrete, physical nature of the city, or on its specific *contextual structurality*. We can observe that the contemporary city outlined in these multidisciplinary surveys appears to lack any historical substrate: every *paradigm of places* seems to have been erased today.

In what we call the *paradigm of places*, we can recognize the historical trajectory of at least two cities. First, the preindustrial city, which we might call the *ostensive city*[2]: this is the setting of direct transmission of knowledge and exchange of culturalization. Is this city really extinct? Actually it has not fully disappeared, either in the modern city of industry or in today's megalopolis, where it still conserves a sizeable potential for redemption of certain urban conditions. Secondly, the *paradigm of places* also covers what we might call the *demonstrative city*[3] of the Modern Movement in 20th-century Europe, well differentiated through specific vocations between historical geographies, urban strategies and architectural poetics. Here we can certainly cite the totalizing projections of the modern city from early Futurism (Antonio Sant'Elia, *La Città Nuova*, 1914) to the manifestos of Le Corbusier (*Ville contemporaine de trois million d'habitants*, 1922; *Plan Voisin*, 1925; *Ville Radieuse*, 1933), as well as the epic of the construction of the socialist city in revolutionary Russia; but it is more precisely epitomized by the experience of the Modern Movement, which between the two wars interpreted the paradigm of the industrial city in Central Europe through architectural undertakings that assigned to individual objects or urban portions (for example, the many constructions of housing areas for the working class in Berlin, Frankfurt, Rotterdam, Vienna, Amsterdam) the task of representing a general idea of the city.

Deprived of its anthropological substrates, the contemporary city tends to be identified today as a *chaotic set of flows of communication*. The electronic paradigm replaces the *mechanical paradigm* and the *real time* of information overrules the *space* of physical relation: architecture would thus have the job of spreading the emblems of technological optimism and economic wellbeing through the *media totem* of its *dematerialization*.

The ideological fetishes of postmodernism, now more pervasive than ever, become the ambassadors of a neo-liberism that proposes the market as the peerless instrument of rational allocation of resources, the sole motor of urban transformation. In all cases, even when reality blatantly reveals its shortcomings. Just consider the specular cases of urban *reduction* and *unlimited expansion*. The first has to do with the occidental cities of Fordist production whose populations have shrunk due to phenomena of deindustrialization. The most striking example is Detroit, which now has 700,000 inhabitants, two thirds less than the 2,000,000 of forty years ago. Detroit is followed by other cities like Cleveland, Kansas City, Flint: ghost towns that try to bounce back from decay mainly by concentrating on the "green economy", on advanced sectors (biomedicine), cultural facilities (museums), with an avowed awareness that these processes cannot be governed by market forces, because they happen in a «market void».[4] The second has to do with the boundless proliferation of the megalopolis in the poor and emerging countries of the Third World, a catastrophic "market" consequence caused by the expulsion of poor peasants from the countryside by large corporations.[5]

Now we can draw an initial conclusion that also has closely to do with the problems of our country, as we will see in the final argument, particularly regarding strategic infrastructures. We can observe that the theme of the so-called "smart cities" gains increasing appeal precisely as *material* proof, so to speak, of the dynamic force of growth of the *immaterial city*. Smart cities, in fact, are said to have success in international competition thanks to their infrastructures of communication, of production of knowledge, of opportunities for social relations: instead of hard infrastructures, the fixed social capital that is an inseparable part of the bodily nature of the city, what is seen as decisive for growth – sustainable growth, of course – in contemporary cities is "light infrastructure", namely intellectual and social capital that, to be honest, is simply the far-from-new concept of human capital and investment in knowledge. It may seem obvious to point out the fact that without suitable physical infrastructures, smart cities cannot take off, because they can grow only by relying on the basic potential of traditional though perhaps also technologically advanced infrastructures. But this observation is often overlooked.

This is demonstrated, without the need for further evidence, by the huge investments of the Trans-European Transport Network (TNT-N) program, including roads, railways, inland waterway networks, motorways of the sea, seaports and inland waterway ports, airports and other interconnection points between modal networks.

At this point we can set out to address three main issues, before concluding with the illustration of the concrete case of Milan:

2) Architecture of dematerialization: what species of architecture?
3) The world city: physiological antidotes?
4) The European and Italian city: which structurally contextual architecture?

2. Architecture of dematerialization: what *species* of architecture?

Talking about architecture of dematerialization, we cannot but wonder about the *species* to which it belongs. As an exemplary reference point, we can take one of the recognized progenitors, the Centre National d'Art et Culture Georges Pompidou at the Plateau Beaubourg by Renzo Piano and Richard Rogers, Paris, 1971-78. We can observe that this work of architecture is rather averse to the so-called "patina del tempo", which is not just the materic evolution built into the physiological cycle of a building, but rather its capacity to express the historical depth of a figurative paradigm. Aiming to correspond without wrinkles to the idea it projects of itself, this architecture pursues a state of eternal present as eternal youth, something like an amusement park ride or any machine of *loisir* that can exist only outside the sense of time, to infinitely extend the incorruptibility of the recreational imagery. A sort of Dorian Gray syndrome, an obligation to have "permanent fresh paint" that obliges contemporary architecture (as seen by the media) to have the spark of *technological novelty* and the "commonplace" of the *transparency of the enclosure* in which all distinctions vanish and, therefore, any relationship between interior and exterior space. We do not agree with explanations that sing the praises of total transparency of the wrapper and the resulting indoor-outdoor leveling as the conquest of a single spatial material, homogeneously spread between the building and urban space, and even indicated as a step towards democratization. Instead, it seems to us that this is simply a way of making the city into a series of shop windows, of showcases displaying a single typological, behavioral and figurative model, that of the *shopping center* that saturates and depletes the differentiation and variability of relations between the public and private, collective and individual spheres, between the external and the internal, which have always been vital pulsations of the city. In this way the construction of the *showcase-city* takes on the task of representing the conjunction between space-time of consumption, services, leisure time, and the parallel dissociation from the world of production. It is understandable that this architecture gutted of historical depth, in order to escape the fate of anonymity of *non-places*, has to force its recognition factor to extremes of media broadcast and formal eccentricity, operations that – like certain kinds of plastic surgery or excessive make-up – transform visages into masks, in the effort to beautify them, with even more devious results when they are translucent.

Stripped of its constituent elements, architecture is left only with the ersatz rhetoric of iconic language borrowed from the *creative professionals* of mass communication, almost a *topos* of contemporary architecture skewed towards gaining a wider audience. We refer here to the coy simplism of directly deployed metaphorical borrowings, to the point of extreme banality. For example: seaside airports like seagull wings; auditoriums like beetles; convention halls like clouds; museums on the sand like desert roses; clustered spaces like fruit of botanical organisms; marine museums like sails; and so on, in an endless list. More than works of architecture, these are logos that speak the neo-kitsch language of the present, media Esperanto, on a par with useful objects in domestic space: the result is a caricature, stripped of any cognitive intent by its hedonistic drift, of the slogan "from the spoon to the city" cherished by the moral-methodological positions of modernism.

3. The world city: physiological antidotes?

The theme of the world city is too vast and complex to approach here in a systematic way. We can instead rely on one example I think is very important. The project by Lina Bo Bardi for the SESC Pompéia in São Paulo, 1977-1989 revitalizes an abandoned industrial area on the city outskirts with a range of collective activities - cultural, social, for sports and leisure time – part of the program of the Serviço Social do Comércio (SESC), a non-profit organization which promotes cultural and educational activities all over Brazil, to create new social gathering places in the urban suburbs. While some of the community and social centers have encountered a range of different problems, SESC Pompéia continues to function very well. I think a large part of its success can be attributed to the exceptional quality of its architecture, where the program of activities for a precise social target leads to typological and figurative inventions that have nothing to do with formal indulgence, and are able to correspond with authentically poetic propositions to the requirements of collective reclamation of the city. The words of Lina Bo Bardi are significant: «My aversion for air conditioning is matched only by my horror of carpeting. This is what led me to create the glassless, featureless prehistoric "caves" which provide constant cross-ventilation. […] the Pompéia complex is strikingly Expressionist. […] This is probably a result of my European training, but this doesn't mean I have forgotten the Surrealism of the Brazilian people, their inventiveness, the pleasure they take in being together, *todos juntos*, in dancing and singing. Therefore my work in Pompéia is dedicated to the young, the children, the elderly: *todos juntos*».[6] Aware of the different cultural traditions of Europe and Latin America, SESC Pompéia recomposes and reinvents the roots of urban culture outlined above: both that of the ostensive city, the theater of exchange of cultures whose resistant anthropological foundation can still represent a vital resource for the contemporary city; and that of the *demonstrative city* of the Modern Movement, completely regenerated in the encounter between different cultures and interpreted context by context, case by case.

In this perspective, we can also insert the hopes of Saskia Sassen: «The type of urban order that gave us the open city in Europe, with its magnificent squares and public buildings, is still there, but increasingly as mere visual order, and less so as social order. […] The gravity of injustice and the lack of economic, political and environmental sustainability represent a potential for reinventing that capacity of cities to transform conflict into openness rather than war. […] It is in the metropolis that this type of project has a possibility of working. And the more diversified and complex the city, the greater the probability of success. In this sense, the global city is the ideal terrain for this type of work: it has internationalized the economy, and now the time has come for the internationalization of peoples and cultures».[7]

4. The European and Italian city: which structurally contextual architecture?

We know that Europe, with the exceptions of London and Paris, does not have big cities comparable to those of the Americas and Asia. In fact, the European settlement system is composed for the most part of polycentric urban frameworks, substantially balanced and characterized by mutual multipolar relations. Just consider the settlement systems of Flanders, Holland, the Rhine Valley, the Ruhr region, the Hanseatic cities, where markets, fairs, universities, ports and productive activities have represented the driving forces of a long-term historical formation that contibutes to the character of the European landscape and continues to present the established factors of *measure* and *urban metrics* as unavoidable themes of architectural design.

These characteristics are even more marked in the Italian landscape and city. Carlo Cattaneo, in the "order of the *municipia*" starting in the Roman era, could already glimpse the unique character of the Italian landscape: «From the earliest times the city in Italy has been something different than the city in the Orient, or in the North. […] [In Italy] the city formed an inseparable unit with its territory. Traditionally the people of the countryside […] still take the name of their city, as far as the borderline with another populace that takes the name of another city. […] This adhesion of the peasantry to the city, where dwell those of greater authority, wealth and industry, constitutes a political persona, an elementary status, permanent and indissoluble».[8]

The historian of the Middle Ages Vito Fumagalli expands on this: «The Italian city, crowded by the middle classes but also by nobles, is profoundly different from the urban centers located to the north of the Alps. […] in Italy there is never a drastic separation between city and countryside; they were never, not even in the High Middle Ages, two different landscapes: that of the cities inhabited by the burghers, that of the countryside, realm of the fortresses of nobles, great abbeys, villages built in their shadow. In our country, more often men and landscapes intersected, mixing in hybrids, to the point that villages took on almost urban characteristics and cities maintained markedly rural features, even at the height of the Middle Ages, except in the deep heart of the Po Valley plains and in the mountains, where the nobles continued to rule almost unchallenged».[9]

In the fleeting, transitory contemporary condition, should we still consider as obsolete the foundations of *measure* and *urban metrics*, primary constituents of the landscape of the European city and, in particular, of the Italian city? In the Italian city, what should be done with that long-term character specific to the city, its lack of complete opposition between city and countryside, in a situation of osmosis, as documented by historians?

5. "Another Milan is possible" (G. Canella)

Rejecting any abstract application of models, it is worth reconsidering the concrete specificity of every settlement culture.

The case of Milan can demonstrate the possibility of an alternative to the model of the world city as a hypertrophic, congested, fatally uncontrollable aggregation.

This different perspective of development is the result of research conducted in recent years and also developed in educational activities with students at the School of Civil Architecture of Milan Polytecnic, in the Architectural Design Workshops taught by a group of professors guided by G. Canella and composed of P. Bonaretti, E. Bordogna, M. Canesi (urban planning), Ge. Canella, D. Chizzoniti, L. Monica, collaborators M. Biagi, C. Bischeri, E. Manganaro, C. Pavesi.

As opposed to the idea of the "Grande Milano" of two million inhabitants (as opposed to the present 1.3 million) proposed by the local government (City, Province, Region) with the goal of finally inserting the Lombardy capital among the world cities, in keeping with the model of the architecture of globalization, Milan and Lombardy, due to their particular historical settlement framework and differentiated urban identities, can constitute a city of 7 million inhabitants in a polycentric metropolitan system with accessibility from and to any place in the regional territory (through regional rail service) in urban transport timespans (under 60 minutes). The possible range of use of this "Lombard Polycentric City" would promise a role as a world city, starting with consolidation of crucial productive sectors (machine tools,

textiles) and promotion of new economic relations, first of all in the Mediterranean area. Therefore, to sum things up in an aphorism, we might say of Milan: magna sed apta mihi.[10]
In particular, along the historic northwest axis between the Garibaldi Station and Expo 2015, strategic roles can be found for different areas, connected in a new "linear city":

1. Garibaldi–Administrative Center: though almost saturated at this point by an indiscriminate accumulation of generic office space and residences, the area conserves its indispensable strategic role to guarantee maximum access between Milan and its territory. In the New Garibaldi Station all levels of rail service would be available (continental, regional, district, urban), creating the conditions to locate strategic management activities, selected to reinforce the Lombard productive fabric and relationships on a Mediterranean scale;

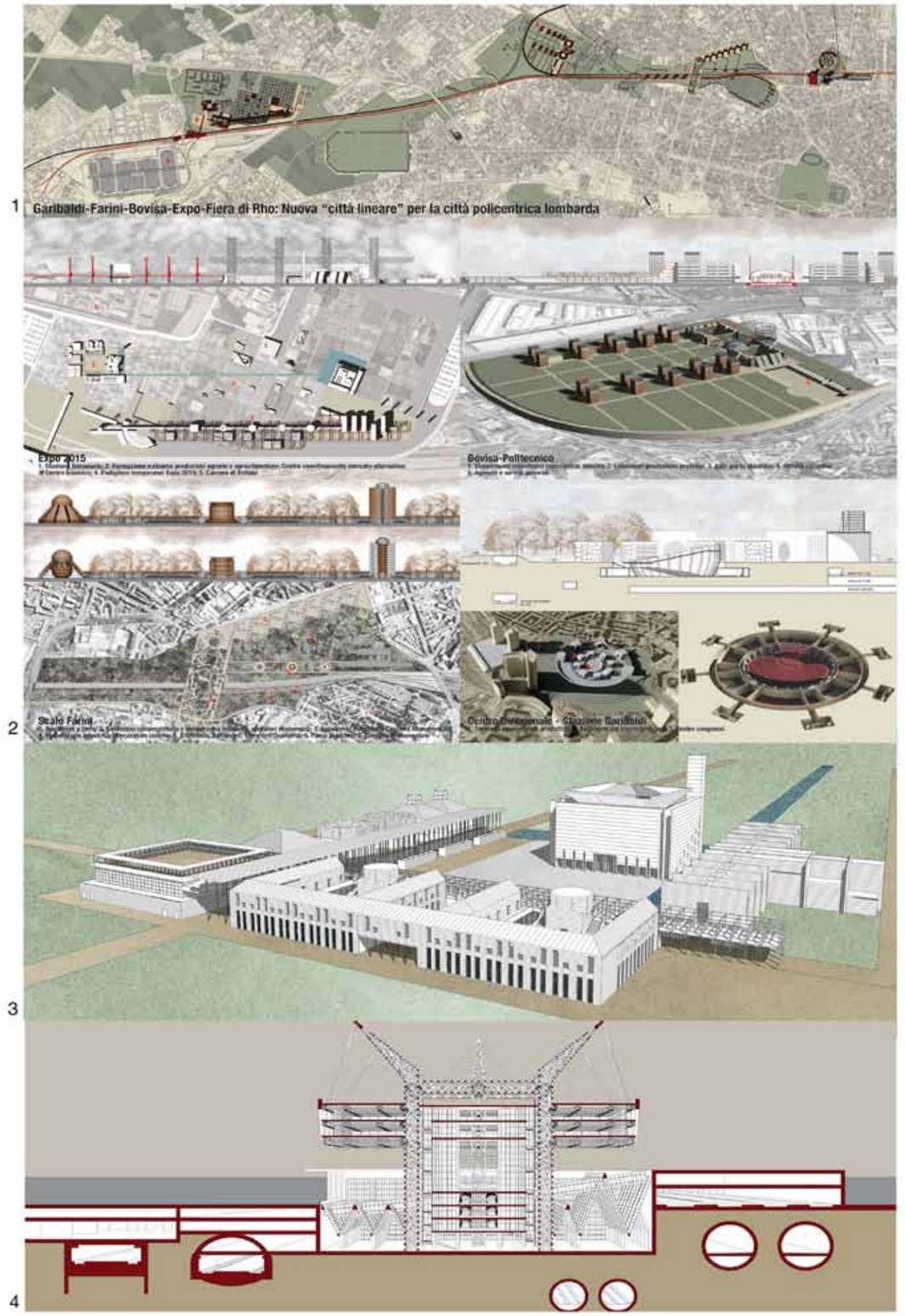
2. Farini Rail Yard: as opposed to the institutional proposals of real estate development, the recently abandoned area of the former rail yard (about 1 million sq meters) should combine the primary function of a large urban park with appropriate supply of temporary and subsidized housing (for students, economic operators, particular population categories) and structures for culture, sports and leisure time;

3. Bovisa-Politecnico: marked for over one decade by the now established presence of the Polytechnic, this area is particularly suited to host a technological center for machine tools, with research structures and production of prototypes, to support Lombard manufacturing in connection with university training and research;

4. Expo 2015: in a structural interpretation of the official themes of Expo 2015, "Energy for Life" and "Feeding the Planet", a pole of coordination of relationships between advanced and developing countries should be located here, concentrating on specific issues like nutrition, earthquake risk prevention, safeguarding of land and water resources, as well as the Islamic Cultural Center of Milan. The temporary pavilions of the Expo, after the event, could all or in part be converted to contain facilities of representation of the countries of the South and the North of the world.
Due to the responsibilities assigned to it in this development strategy, architectural design – rather than being an ornamental image exercise – would play a decisive role in the structural transformations of the city, to produce a landscape of modernity rooted in the metropolitan legacy of architecture in Lombardy.

Notes
[1]. Cfr., for all, A. Amin, N. Thrift, Cities. *Reimagining the Urban*, Cambridge, Polity Press, 2001.
[2]. L.S. D'Angiolini, *Saggiare polloni e radici fino a costruircene nuova etnia*, in «Hinterland», I, n. 4, 1978, pp. 50-54.
[3]. G. Canella, *Introduzione, in 1930-1942. La città dimostrativa del razionalismo europeo*, ed. L. Caruzzo and R. Pozzi, catalogue of the exhibition «Architettura moderna: poetica e impegno civile» at the 16th Milan Triennale, Palazzo dell'Arte, 17 September – 25 October 1981, Angeli, Milan, 1981.
[4]. F. Rampini, *Aiuto si è ristretta la città. Le piccole metropoli del futuro*, in «la Repubblica», 15 April 2011.
[5]. Cfr. L. Gallino, *La lotta di classe dopo la lotta di classe*, interview edited by P. Borgna, Laterza, Roma-Bari, 2012, pp. 29-31: «[…] large corporations specialized in the production of foods or their marketing […] buy or rent for 99 years enormous areas, tens of millions of hectares, in many African countries, India, the Philippines and Latin America. Then they introduce extensive, usual monocultural crops, with a very strong advance of mechanization and the resulting removal of peasants from the fields they once worked. [The expelled peasants] in most cases are forced to seek another type of employment in the city, usually in the informal economy; many wind up increasing the population of the slums. […] To date, more than half of the world's population lives in cities or urban agglomerations: of this half, a bit less than one third live in slums».
[6]. L. Bo Bardi, *SESC Leisure Centre "Fábrica da Pompéia", São Paulo, Brazil*, in «Zodiac», n. 8, 1992, p. 225.
[7]. S. Sassen, *La città aperta e i suoi nemici. Il mondo salvato dalle metropoli del futuro*, in «la Repubblica», 4 April 2011.
[8]. C. Cattaneo, *La città considerata come principio ideale delle istorie italiane*, ed. G.A. Belloni, Firenze, 1931, now in *La città come principio*, ed. M. Brusatin, Marsilio, Padova 1972, pp. 7-9.
[9]. V. Fumagalli, *La pietra viva. Città e natura nel Medioevo*, il Mulino, Bologna, 1988, pp. 26-27.
10. Inversion of the famous Latin phrase *Parva sed apta mihi*, written over the entrance to the home of Ludovico Ariosto in Ferrara.

Image captions
1. 2. Garibaldi-Farini-Bovisa-Expo 2015-Rho Fair: the new "linear city" for the Lombard Polycentric City. Workshop "Rail yards", School of Civil Architecture of Milan Polytechnic, 21 September – 9 October 2009.
Teachers (continuation of the Workshop of G. Canella): P. Bonaretti, M. Canesi (urban planning), D. Chizzoniti, L. Monica, E. Manganaro, C. Pavesi.
Students: L. Brambilla, F. Della Bosca, A. Gobbo, G. Leo, M. Mezzetti, S. Malavasi, M. Prada, N. Ramirez, A. Sardone.
1. Garibaldi-Administrative Center: strategic management offices (agencies of business development and coordination, contracting centers, engineering, logistics).
2. Farini Rail Yard: urban park, temporary housing (students, economic operators); subsidized housing; community activities; expansion of the Monumental Cemetery.
3. Bovisa-Politecnico: technological center on machine tools; technological center on new materials (mechanical, textiles); production of prototypes.
4. Expo 2015: center of coordination of relations between developed and developing countries (nutrition, earthquake risk prevention, safeguarding of land and water resources); Islamic Cultural Center; temporary pavilions Expo 2015.
5. Existing Rho trade fair facility.
3. Architecture for coexistence. The Islamic Cultural Center in the new Garibaldi–Farini–Bovisa–Expo–Rho Fair linear city. Degree project by M. Mezzetti, advisors P. Bonaretti, M. Canesi (urban planning), co-advisors D. Chizzoniti, L. Monica, C. Pavesi, A. Migliacci (structures), School of Civil Architecture of the Milan Polytechnic, 2010.
View of the Islamic Cultural Center in the area of Expo 2015.
4. Garibaldi-Administrative center: in the Lombard Polycentric City new roles for Milan on the northwest axis.
Degree project by A. Gobbo, N. Ramirez, A. Sardone, advisor P. Bonaretti, co-advisors C. Pavesi, A. Migliacci (structures), School of Civil Architecture of Milan Polytechnic, 2011.
Perspective section of the new rail station (high speed rail, rail bypass, regional and district lines, Milan urban subway).



Michal Braier
Israel Institute of Technology, Israel

Planning in the Gray Zone, Challenges and Opportunities: The case of Independent Zoning Plans in East Jerusalem

E.B.: “Wait, what about this one?”
D.Z.: “Rejected”
E.B.: “Because of building lines ?”
D.: “Mainly”
Y.L.: “Also the legal procedure”
I.G: “No”
D.Z.:” Yes, yes, yes”
I.G.: “Oh, yes”
D.H.: “There is no argument that we have here a couple hundred meters of [building violations]…”
I.G.: “Oh, right”
A.A.: “The conclusion… one needs to build it in the building lines”
E.B.: “What if they propose adjusting the building lines?”
D.Z.: “How?”
D.Z.: “There is expansion and there is reduction”
A.A.: “I always tell people in these discussions, look, there is [sic], I say two attitudes in building violations, there is someone, you know, [who] builds a building offence, doesn’t ask anyone, doesn’t get a permit, ok, its severe, but this person built more severe, [he] obtained a building permit, harassed the system, asked for this and that, came to the committee to obtain his permit, got the building permit went and built something else, that’s annoying”
I.G.: “Is it more severe from someone who did with no permit at all?”
A.A.: “Not that it’s more severe, it’s more annoying”
(Jerusalem District Planning and Building Committee, transcript from 4.1.09, plan no. 12711, author’s translation)

This text offers a small glance into one of the weekly sessions of the Jerusalem District Planning and Building Committee, dealing with a three story building in the Palestinian neighborhood of Beit-Hanina in East Jerusalem. Built in deviation from the original building permit, the committee regards the building ‘illegal construction’. In an attempt to avoid house demolition, the land-owner has initiated and independent spot-zoning plan that will enable him to legalize his situation. Reviewing the plan’s documents, it seems to fully compel with existing planning instructions.

How is it then, that the plan is rejected so offhandedly? A decision which leaves the houses exposed to pending demolition. Why is the municipal planner so annoyed from being asked to do his job? What sort of relationship dictate the dynamics of the Planning Committee when it comes to planning in the Easter part of the city, vis-à-vis its Palestinian residents? What role does urban planning play in the mediating the political tensions of such a contested city?

The case of independent plans in East Jerusalem offers an opportunity to explore different modes of “planning citizenships” (Yiftachel, 2009:97), operating from within the planning system while utilizing professional skills and knowledge. But because such practices are imbedded in the prevailing social and cultural context of the Israeli project, working within this system always runs the risk of enforcing and reproducing coercion. Thus, the question arises – can one challenge, even if partially, the existing power relationship using the structural categories of urban planning? Examining the negotiations taking place around the practice of independent plans, I suggest that the Palestinian encroachment on the institutional system dwells on the contradictions between ethno-national logics of separation and oppression, modernist notions of rational-comprehensive planning, and neoliberal mechanisms of market driven urban development. Using the language and tools of the state administration and law, these small but direct actions inside the planning seek to undermine the professional and national rationale underlining it.

The term ‘East Jerusalem’ refers to Jordanian Jerusalem and 28 adjacent villages, annexed to Israeli Jerusalem Municipality immediately after the end of the 1967 war, and tripled its size (B’tselem, 1995). Inhibited by 69,000 Palestinians at the time, according to Israeli records, in 2009 there were approximately 270,000 Palestinians living in the municipal area of Jerusalem, out of nearly 765,000 residents . Differently from the occupied territories, Israel imposed its jurisdiction and administration on the Eastern part of the city, a move that remains unacknowledged by the international community. As an outcome, the inhabitants were entitled to receive permanent residency rights including relative freedom of movement and employment (Benvenishti, 1996). Full citizenship, however, required recognition of Israeli sovereignty within the distorted borders and was therefore rejected by the Palestinians. For similar reasons, the Jerusalemite Palestinians have also refused to participate in municipal elections and politics (Bollens, 2000).

Since 1967, planning tools and regulations such as boundaries, land-use codes, building restrictions and infrastructure distribution were utilized to create and maintain Israeli geographic and demographic dominancy of the city . Yet, albeit these persistent policies of urban colonization to forcefully realize the Israeli vision of the ‘unified city’, Palestinian neighborhoods on both sides of the recently built separation wall have significantly expanded (Brooks et al., 2009). In the last two decades, informal housing, as well as the provision of other services, has become one of the most ostensible features of urban development in the Palestinian part of the city. Current estimates show that at least one third of all Palestinian housing units in East Jerusalem are built without obtaining a building permit (Schaeffer, 2011:33). Hence, law enforcement in the form of heavy fines and house demolitions seems to be inefficient in neither directing nor controlling urban growth.

The urban fabric created through this process is regarded by the planning authorities as chaotic, disturbing and threatening, as can be understood from the following quotation of the District Planning and Building Committee protocol:

“As we are dealing with existing construction which has preceded planning, in contrast to the *proper order of thing*, altering the plan’s guidelines will not suffice, *since it is the existing structure that contradicts planning policy*. Therefore, *there is no refuge from demolishing* the existing structure, which is incompatible with the permit, and submitting a new plan that will facilitate the planning policy.” (Jerusalem District Planning and Building Committee protocol, 4.1.09, plan no.12711, author’s translation and emphasis).

The intimate significance of the house as a family’s home is neutralized by the technical term into a mere ‘structure’. It represents a space which Roy, following Mouffe, conceptualizes as a “constitutive outside” (2011:224). This is a form of partial integration, of creating loopholes and exceptions to state policies appearing within the urban structure. Being in a constant condition of emergence, an outside that is inside, these spaces reveal the unsteadiness of state coercion. Erasure, it is implied, is therefore the only way of reconstructing the appropriate urban order, and sovereign power along with it.

Under the tireless surveillance of the urban space in East Jerusalem (Keysar, 2010), the mere fact that no precise data exists on the scope of unauthorized housing, reveals the threat it poses to state control. It is put to use for retaining this urban development as external to the planning system, that which cannot be planned, and therefore cannot be controlled. But, as Roy powerfully argues, it must be understood as an outcome of governmental logic through which differential spatial value is produced and managed (2011:233). Moreover, these spaces also have a potential for becoming a zone of transformation where, due to the continual changing process, marginalized groups can negotiate their rightful stake in the city opposing powerful interests (Yiftachel, 2009). The urban scale plays an important role in this process, since it allows articulating demands which cannot be facilitated on the national level.

In roughly the last decade, despite escalating cycles of violence and hostility between Israelis and Palestinians, there has been a seemingly marginal but growing flux of attempts to legalize informal housing using professional urban planning. This is noted by the proliferation of independent ‘spot-zoning’ plans submitted by private and semi-private Palestinian initiatives to the Israeli planning authorities. In the acute gap between existing statutory planning and the urban reality, the planning process of the independent zoning plans means using the structural categories of urban planning for negotiating over spatial existence as well as modes of citizenship. The struggle to cross the complex paths of the bureaucratic planning system emerges as a form of constant negotiation. It involves using the language and tools of the state administration and law, but at the same time it seeks to undermine the professional and national rationale underlining it.

The independent plans, similar to the one presented in the opening remark, are usually submitted subsequent to the issuing of demolition order(s) for the purpose of legalizing the existing house(s). In most cases, the objective is to re-zone the land, mainly from ‘green’ area to residential use, and increase the building rights on the plots. Because of landownership requirements, these plans are limited in scope usually applying to only a few dunams of land.

The submission of a plan serves a double purpose of securing against demolitions, as well as of creating small scale opportunities for expansion. It is due to this dual nature, of survival along with gradual improvement and accumulation, that I propose understanding this action, not as direct opposition to the colonial power relationships in the city, but rather as a form of “quiet encroachment” on state mechanism and power (Bayat, 2000). These arbitrary and un-coordinated actions are cumulative in two senses: individually, they are formulated not only in terms of defensive resistance but also to accommodate growth; collectively, their power lies mostly in the agglomeration of small and quiet but direct actions inside the planning system. This sort of flooding, albeit it’s limited material gains, gives real people a voice and a face in a highly biased and bureaucratic system.

The right to submit an independent plan was established in 1995 through the 43rd amendment to the Israeli Planning and Building Law (clause 61a), which entitled land owners to initiate a plan on their land, a right previously reserved explicitly for public authorities. In East Jerusalem most of the land remaining in Palestinian hands is privately owned. Therefore, the amendment enabled Palestinian residents for the first time to directly partake in the planning process of their immediate environs, even if in a highly restricted way. Following the revision of the law, there has been a steady rise in the number of independent plans submitted to the District Committee in East Jerusalem. The number of validated plans has risen from only a handful of in the beginning of the 1990’s, to a few dozen yearly since the middle of the last decade . In 2009-2010 more than 350 local independent ‘spot-zoning’ plans were reviewed by the committee, compared to only 9 larger scale plans , and 3 comprehensive plans . Of the reviewed plans 60% were approved. These numbers indicate clearly that this spot-zoning practice, which does not require the authorities’ a-priory agreement, is in fact the most prominent planning activity currently taking place in East Jerusalem.

In the context of the Israeli planning system, it is not unusual to find the use of spot-zoning plans in ways that diverge and even contradict long-term comprehensive planning. In fact, as Alfasi (2006) notes, in the majority of cases it is governmental agencies and planning administration bodies that are the leading applicants for such amendments to the plans they themselves made and authorized. This reverses the top-down hierarchy of the national planning system by transferring power to the bottom level of the planning scale, which is the detailed architectural plan of the planning application. The centralized planning system plays a major role in promoting Israeli national ideological goals such as dispersing population to the peripheries and ‘Judaization’ of national space (Yiftachel ,2006), where most construction is implemented by public agencies. In reality, bottom-up dynamics conflict with this conception, and have created static and out-of-date master plans chasing after the actual development rather than leading it (Fenster, 2004).

The spot zoning practices play a significant role in enabling the flexibility of market driven development and privatization that prevail in Israel, and elsewhere, since the 1980’s. As Harvey (2005) argues, the growing power of these neoliberal tendencies, with their focus on individual rights, centrality of property rights, and culture of individualism and consumption, allow uneven spatial development. One striking example is noted by Margalit (2009) in the evolution of luxurious high-rise buildings in Tel Aviv-Jaffa since the 1950’s. These separately promoted spot-zoning plans, she suggests, should be understood as “planning deals” packing large-scale privatization together with public assets, i.e. publicly owned land and public facilities. The enslavement of authorities to private capital limits development to market lines at the expense of compromising of public interest and exacerbates social, economic and spatial inequalities in the city.

Tel Aviv’s soaring skyscrapers might seem as the extreme demonstration of neoliberalism’s victory over nationalism, which can be attributed to the claim that the city is gradually becoming a global city, where capital investment and marketing are weakening the efficacy of the state’s regulatory control (Alfasi and Fenster, 2005). However, this indicates the further deepening of socio-economic gaps between center and peripheries, between privileged and the subordinate, which is embedded in both national and market ideologies. As Tzfadia and Yacobi (2011) argue, not only that globalization and nationalism do not necessarily contradict, in Israel, neoliberal economic policies have maintained and even emphasized ethno-national goals and social satisfaction in the organization of space.

Yet, examining the specific attributes of the spot zoning practices in East Jerusalem highlight that in “actually existing neoliberalism” (Brenner and Theodore, 2002) market forces do not operate according to immutable laws wherever they are unleashed, but rather have diverging results of neoliberal ideology as a consequence of their national, regional and local context. My claim is that in this case the superposition of national and market logics within the planning system has opened up a new course of action for excluded and subordinated residents leading to unexpected and sometimes contradictory results. I argue that the independent plans reveal the tensions amongst competing logics that shape the urban spaces of contemporary Jerusalem. Caught between ethno-national logics of separation and oppression, modernist notions of rational-comprehensive planning, and neoliberal mechanisms of market driven urban development, the Palestinian encroachment on the institutional system dwells on the contradictions which constitute them.

Jerusalem is one of the poorest municipalities in Israel (Hasson, 2007), and the planning department is well aware of the ambition to find alternative sources for producing urban development. Hence, the independent plans hold a resource for generating ex nihilo lacking public facilities and promoting infrastructure development greatly missed in East Jerusalem due to years of municipal neglect. It is equally aware of the Palestinian hostility towards Israeli policies after years of land-expropriation and discrimination.

The entrepreneurial approach is evident in a policy adopted for the northern neighborhoods of Beit-Hanina and Shuafat, which are considered to be relatively urban with a largely ‘modern’ land-market. The policy is designed so that anyone who wishes to implement the currently facilitated building rights must allocate some resources for public use, either by allotting vacant land or by supplying built spaces at ground level. Through this, the developer is to deliver a refined product to the municipality. The larger the plot is the more allocation is demanded, and the more building-rights are granted, as the municipal planner explains:

“The instruction was on one hand to reach, but of course not to exceed, the maximum [building rights] that are allowed in the master-plan, and on the other hand to make it profitable enough, economically so to say, for the entrepreneur so that he gets more and also the municipality gains its spaces for public purposes to address the shortages in the programme…” (Jerusalem District Planning and Building Committee, transcript from 4.1.09, author’s translation)

The fact that many of the lots already zoned for public use in these neighborhoods remain undeveloped is paradoxically used to enhance further the need for such policies. It acquires its plausibility from the economic discourse it uses, which obscures the restrictions on Palestinian construction. It also promotes the physical restructuring of the city to comply with what is perceived as ‘good planning’, while highlighting a modern view of the good city:

"No one likes it, but this is the programme, and if the programme we made raises a shortage it needs to be addressed, even if it is undesirable, this is why we did approve it as a policy… To come and take [Palestinian] villages from the east or the north of the city, everybody wants to resemble and become a city and obtain rights equivalent of the western city, this has implications, there is nothing we can do about it" (transcript from 4.1.09, author's translation)

The Israeli part of the city is, accordingly, the only one that can be regarded as a 'real' city, or a city at all. Rights, in this case building rights, are not an integral part of being a resident of the city. Rather, they are something one needs to 'pay-back' for. The Palestinian residents are trapped between these logics. In many cases, they subvert this order by partially rejecting the economic equation: they built four stories and ask for additional legalization rather than build a new six-floor house; they split plots in order to avoid land allocations; they get a permit but built a different building; and they flood the administrative systems with stories and requests even when they are most likely to be rejected out front. Mostly, they create a de-centralizing movement in the planning process that challenges its professionalism, exposes the political effects and consequences, and obliges the planners to redefine time and time again the boundaries between the two.

References

Alfasi N., Fenster T., "A tale of two cities: Jerusalem and Tel Aviv in an age of globalization", *Cities*, 22 (5): 351–363, 2005.

Alfasi N., "Planning policy? Between long-term planning and zoning amendments in the Israeli planning system", *Environment and Planning* A 38: 553- 568, 2006.

Bayat Asef, "From 'dangerous classes' to 'quiet rebels': the politics of the urban subaltern in the global South". *International Sociology* 15.3: 533–57, 2000.

Benvenisti Meron, *City of Stone: the Hidden History of Jerusalem. Berkley, Los Angeles*: University of California Press, 1996.

Bollens Scott, *On Narrow Ground: Urban Policy and Ethnic Conflict in Jerusalem and Belfast*. Albany: State University of New York Press, 2000.

Braverman Irus, "Powers of Illegality: House Demolitions and Resistance in East Jerusalem". *Law and Social Inquiry*, vol. 32(2): 333-372, 2007.

Brenner Neil and Nik Theodore, 2002. "Cities and Geographies of "Actually Existing Neoliberalism"", *Antipode* 34(3): 349–79.

Brooks, R., Khamaisi, R., Nasrallah, R., Hidmi, A., and Waary, S., *Jerusalem Wall: A decade of Division and Urban Incarceration*. Jerusalem: IPCC, 2009.

B'Tselem, *A Policy of Discrimination: Land Expropriation, Planning and Building in East Jerusalem*, Jerusalem (Hebrew), 1995.

Fenster, Tovi, *The Global City and the Holy City: Narratives on Knowledge, Planning and Diversity*, England and New York: Pearson/Prentice Hall, 2004.

Harvey David, *A Brief History of Neoliberalism*. Oxford: Oxford University Press, 2005.

Hasson Shlomo (ed.), *Jerusalem in the Future: The Challenge of Transition, Jerusalem.* Jerusalem: The Floersheimer Institute for Policy Studies, 2007.

Keysar Hagit, "Traces of Life: The Imaginary Property and the Stored Home". In: Ariella Azoulay (ed.) *Home Less Home*. Jerusalem: Museum on the Seam. pp.262-273, 2010.

Khamaisi Rassem and Rami Nasrallah, (eds.) *The Jerusalem Urban Fabric: Demography, Infrastructure and Institutions*. Jerusalem: The International Peace and Cooperation Center, 2003.

Margalit T., "Public Assets vs. Public Interest: Fifty Years of High-rise Building in Tel Aviv-Jaffa", *Geography Research Forum*, 29: 48-82, 2009.

Marom N., *The Planning Deadlock: Planning Policies, Land Regulations, Building Permits and House Demolitions in East Jerusalem*. Jerusalem: Bimkom – Planners for Planning Rights and Ir Shalem (Hebrew), 2004.

Misselwitz P. and Rieniets T. (eds.), *City of Collision, Jerusalem and the Principles of Conflict Urbanism*. Basel: Birkhaeser, 2006.

Nasrallah R., "To the Suburbs and Back". in: Misselwitz, Philipp and Rieniets, Tim (eds.). *City of Collision, Jerusalem and the Principles of Conflict Urbanism*. Basel: Birkhaeser, pp.377-382, 2006.

Ananya R., "Slumdog Cities: Rethinking Subaltern Urbanism". *International Journal of Urban and Regional Research* 35.2: 223–38, 2011.

Schaeffer E., *No Home, No Homeland*. Jerusalem: The Israeli Committee Against House Demolitions (ICAHD), 2011.

Tzfadia, Erez and Yacobi, Haim, *Rethinking Israeli Space: Periphery, and Identity*. London: Routledge, 2011.

Yiftachel Oren, *Ethnocracy: Land and Identity Politics in Israel/Palestine*. PennPress - the University of Pennsylvania, 2006.

Yiftachel Oren, "Theoretical notes on 'gray cities': the coming of urban apartheid?" *Planning Theory* 8.1: 88–100, 200

Notes

[1] The building lines mark the area of the lot that is eligible for building.
[2] Jerusalem statistical Yearbook 2011, retrieved 29.9.11: http://jiis.org.il/.upload/yearbook/2010-2011/C/shnaton%20C0411.pdf,
[3] These policies have been studied widely, see among others: Benvenisti (1996), Bollens (2000), Khamaisi and Nasrallah, (2003), Misselwitz and Rieniets (2006), Braverman (2007).
[4] In the Israeli land use code, different open area and landscaping categories are generally referred to by the indication of the color green.
[5] Data extracted from the web site of the Planning Administration at the Ministry of Interior: http://mavat.moin.gov.il/MavatPS/Forms/SV3.aspx?tid=3. retrieved September 2011.
[6] These plans were also privately initiated by groups of organized residents and are somewhat larger in scope. This kind of middle-range planning is currently becoming more frequent, and represents an intermediate planning mode, that sometimes includes NGO's involvement. However, I cannot account for this interesting phenomenon in this paper.
[7]These are non-statutory master plans initiated by the planning administrators.

Eamonn Canniffe
Manchester School of Architecture, United Kingdom

Publoid space in the microcosmopolis: two new business districts in Manchester and Salford

In the present time the urban situation has experienced dramatic transformations. Over the last two decades as new development encroached on urban centres, but once again the public realm features as an identifying characteristic of urban quality, a word which might be applied to the most unlikely open areas of hard landscape and 'space left over after planning', as if the name 'piazza' itself was a guarantee of sophistication and pleasure.

The morphological character of public space in the contemporary city is one where the individual identity of buildings dominates. The relationship between these buildings is often so attenuated as to make the space between them redundant, either as a functional entity or as a form of intangible matter binding urban forms together. It can therefore be initially observed that quantity of urban space is not an issue for concern, rather the quality of public space available. In contrast to the present situation, the ambiguities of space in traditional cities represented a positive civic value that was implicitly eclectic, because, however the spaces were developed or designed, they paid some deference to the rich tradition of the European public square. The erosion of any overt political aspect to contemporary public spaces is itself a political symptom of the passivity of populations in established democratic societies. In the contemporary British context this is a result both of the abandonment of political expression to the communications media, but also to the typically undemonstrative character of urban form. If, until quite recently, political representation is largely absent, it is in the changing life of urban spaces that the metaphor of the city as theatre has its most profound expression. This phenomenon has deep roots but not always positive effects.

For example, Aldo Rossi recognized the split between intentions and experiences in his discussion of locus and context in relation to the Roman Forum. In The Architecture of the City he wrote

Locus … is not unrelated to context; but context seems strangely bound up with illusion, with illusionism. As such it has nothing to do with the architecture of the city, but rather with the making of a scene, … saddening us like would-be tourists of a vanished world.

It is hardly surprising that this concept of context is espoused and applied by those who pretend to preserve the historical cities by retaining their ancient facades or reconstructing them in such a way as to maintain their silhouettes and colours and other such things; but what do we find after these operations when they are actually realised? An empty, often repugnant stage.

In this paper I wish to explore two implicitly theatrical contemporary spaces, Spinningfields in Manchester and MediaCity:UK in Salford which attempt to create variety of urban form as a means of replicating the historic development of an urban environment. The commodification of culture tends towards the devaluing of space in favour of the self evident attractions of the architectural object, as the skyline of any developing city attests. In parallel with this tendency at the macro scale, in the life of individuals in the developed world the functional necessity of the public forum has been superseded by the availability of virtual communication and information through electronic media, perhaps liberating traditional public spaces to be more overtly rhetorical in the expression of the ethics of a community.

It is however important to acknowledge that the worth and appreciation of the historic phenomenon of the public space, and at the same time the treatment of the defined urban space as a mundane form has two possible interpretations. Firstly, there is the widely held suspicion that the type of enclosed public space that the piazza represents has become an outmoded form. Secondly, and directly opposed to the former, there is the position that the lessons such piazze contain present an exemplary type of public space which demonstrates that variety, flexibility, historical memory and contemporary aspiration, the most everyday events and the most sacred spaces might be layered into each other and create richly inspirational spaces which continue to demonstrate the importance of the physical experience, in terms of the authenticity of the familiar and the directness of sensation. Curiously, these two positions seem equally valid. One can, of course, enjoy the facilites of an existing space without regarding that experience to be replicable in new situations. It is perfectly possible to hold both views simultaneously, a phenomenon I would ascribe to the strangely fascinating power of the public space, its ability to subsume all types of phenomena into a sense of a shared experience.

Historic environments have continued to be preserved and continue to serve their original social functions, but the influence of commercial urbanism of the United States continues to make itself felt in the development of business districts and peripheral areas of the major cities. In this context the elements of public space are often appropriated as a theatrical component of the developer's armoury in creating a successful segment of the city, yet they are exclusive environments without the diversity which authentic urban situations contain as a matter of course. They repeat the impermeable design solutions which characterised the megastructures of previous decades, while the deliberate creation of a lack of integration between parts of the city through its public spaces is unlikely to be ameliorated substantially by the introduction of exclusive shops as a screen to the parking decks.

In the British situation the city's contemporary appearance is increasingly determined by the brand and what it promises. In contrast to such ephemerality it is the quality of endurance which gives traditional public space its ultimate character. It is risky to make generalisations, but the discreet integration of a piazza with its containing city, the length of time spent in the design and construction of the place and the ambiguity with which it accommodates different functions are what differentiate such spaces from the functionally specific, provisionally constructed and attention seeking urbanism of the present day. While that phenomenon has many possible causes, its relationship to the formerly communicative nature of public space is worth emphasising. The qualities of traditional space, in the allowance for spontaneity within the public sphere, represent the most direct means of balancing the negative effects of the mediated world, through personal encounters with all the agreements and disagreements, pleasures and conflicts they bring.

In the current confused state of architectural and civic debate, accusations of discontinuity between intentions and results are commonplace. Nowhere more so than in the twin cities of Manchester and Salford this situation is exemplified in the Spinningfields development in central Manchester, sited around the former Crown Square, a civic area of court and municipal buildings which has been rebranded as a financial and retail centre by the developer Allied London. The new buildings of the area are without any sense of place, and are glumly staid, a small scale vision of the technocratic urban centre fundamentally delineated by Le Corbusier eighty years ago. They stand around the area awkwardly misaligned with each other and unconvincingly heterogenous in their exterior forms, different wrappings around the same sort of functional space. But at least they have a genuine function, unlike the public space of the area, where the same futile decorative mentality attempts to modify the obvious meaninglessness of the ensemble.

Utilitarian messages are commonplace in Manchester architecture, so the lack of coherence could be thought of as a demonstration of the genius loci of the city. The attempt to produce a 'community' out of office workers which is offered by Spinningfields represents an especially impoverished form of generic urbanism. Attention lights on the palette of accumulated brands precisely because the physical environment (buildings and spaces) in which they are contained is so banal and devoid of consolation.

The public spaces are particularly redundant, because the spaces have no real use, not the sort of the fluid changes of occupation one would witness in an authentic place. The spaces created as part of the development are so stupendously formless they can only indicate their eventual occupation by yet more office building. Large patches of lawn suggest future development plots which might give more definition to these late manifestations of s.l.o.a.p. (space left over after planning).

The inevitable arrival of economic stagnation brought some sense of closure to this recent developments. They have introduced often dramatic change into the Mancunian cityscape, in the wake of the 1996 I.R.A. bomb, but the incompleteness of their resolution and the fragmentary discontinuity their thwarted plans produce is firmly rooted in an urban tradition.

The commercial failure the development is experiencing has induced one extraordinary theatrical reaction. The façade of the Crown Court now has a companion in the construction of a new pub, The Oast House, a work of imagineering which scenographically contrasts with its modern surroundings. Apparently aged brick and dry-stone walling, a rusting corrugated metal roof and a wooden shingle clad tower attempt to evoke an authentic sense of place, but only since October 2011. This, however, is not the type of seasonal and ephemeral structure which the commercial churn requires. Rather it is a semi-permanent solution to overcome the problem of empty, very expensive shops which have failed to provide the promised sense of community in the public space. The level of scenographic skill is quite remarkable and the pub itself, at least, is very busy, but its position in a square originally created as a civic setting for the dignity of the law raises the question of the values public space is now assumed to represent. (Figure 1).

The problematic nature of the public space in Spinningfields is further indicated by the more recent construction of another bar 'The Yacht Club' in Hardman Square. A tensile structure with extensive decking built at some considerable distance from any suitable body of water, the new semi- permanent building helps occupy an unsuccessfully vacant space until the long-awaited economic recovery provides businesses for all the empty office units that surround it. Such leisure sector related distractions however do little to hide the obvious signs of commercial redundancy and failure.

There is a related but slightly different form of expression of public space at another recent development in the neighbouring city of Salford. MediaCity:UK is a brownfield development by Peel Holdings of derelict land adjacent to the Manchester Ship Canal, designed as the new northern headquarters of the BBC and other prominent media companies. The University of Salford also houses its expanding media department there and the metrolink tram system had a special branch line created to connect this business outpost to central Manchester and onward train connections to London. The masterplan used the existing successful cultural landmarks of The Lowry (Michael Wilford 2000) and the Imperial War Museum – North (Daniel Libeskind 2002) as foci for the public spaces of the new development. A large paved plaza, called The Stage uses The Lowry as a piece of urban scenography across the water of the dock. From this space a curving street leads round to a new footbridge which connects to the Imperial War Museum. The large public space is relatively uncluttered, and is bounded on its open eastern edge by a stoa-like structure between it and an area of soft landscape and planting. (Figure 2).

If these strategic moves are sensible the same could not be said of the architecture which forms the backdrop to the public space. A series of slabs, clearly intended to appear as distinct from one another rise up from the lower buildings and demonstrate various levels of ingenuity in their cantilevering forms. There is also a small forest of towers, from the banal blocks of a generic hotel to more individually expressed blocks of apartments, offering views over water but often by convoluted means. Office accommodation is more assertively appointed, especially the diagonally patterned 'Orange' block which loudly announces the availability of speculative office space with its visual disturbance. Less dramatically the street edge is formed by the usual ubiquitous branded outlets.

Now it would be facile to expect a development which began from a tabula rasa to foster any spontaneous character but no provision has been made for such an occurrence. The planning betrays all the efficiency of a popular television format, a high degree of artificiality requiring a complete suspension of disbelief. The public space presents too exposed an arena in the jolt between open and enclosed, the glass skin proving a very effective barrier between the controlled world of the office space and the only marginally less controlled world outside for those without a security pass.

Each of these developments has a distinct strategic intention for their theatrical function. The events in the public space in Salford will be designed to integrate with the television schedules, providing a virtual audience for this still rather isolated location. At MediaCity:UK the events are part of the mission of the place. In contrast, the event calendar of Spinningfields is designed to induce further commercial development and provide customers for the shops and restaurants. But whereas in central Manchester such a strategy of spectacle for the public realm could gain some value from the changeful ephemerality of the events, at Salford Quays it promises all the deadening jollity of highly planned enforced entertainment.

In summary it is possible to assert that the most successful of urban spaces show the same three characteristics, that they are genuinely open and permeable, that they are relatively unadorned, and that they are clearly defined. To consider the first of these aspects, openness is significant as a guarantor of the public nature of such spaces. This sounds banal, but it has to be contrasted to the twin contemporary phenomena, the privatisation of public space and the simulation of public space in the private sphere, particularly for commercial purposes, 'publoid space' which my two examples demonstrate. The second aspect is their liberality of space. A certain severity and robustness of materials far from deterring activity, ensures that a multiplicity of uses are possible within such a space and that variety encourages a vibrant social occupation which an over prescriptive arrangement might prevent. Lastly the clarity of definition reinforces the specificities of place and identity by distinguishing itself from other parts of the city. This aspect of form contrasts with the social manner of openness to create spaces that engage the visitor with the phenomenological experience of the place itself. That only a simulation of this phenomenon is provided by privatized public space should not need stressing. The life of public spaces grew up organically with the juxtaposition of commercial and civic activities rather than being solely the product of commercial ambition. The mistake many contemporary spaces make is in trying to produce that history immediately, leading to inevitable disappointment in the results.

The suburban models which dominate the developed world place a value on unoccupied space which is determined solely by the distance which can be preserved between one citizen and another. Conversely any public spaces worthy of the name functions by encouraging proximity, the contamination of one purpose by another, the variable flow of activities during a day. The possibilities that occur from these planned and fortuitous contacts then fertilize these small patches of urban space so that they assume the specific and sophisticated characteristics of place.

Even a site such as Spinningfields is capable of redemption. On July 5 2009 central Manchester was the site of a performance piece Procession by the artist Jeremy Deller which featured a series of surprising tableaux. In particular it had a series of familiar and unfamiliar sections evoking some populist mythic scenarios. The Rose Queens of Manchester's largely defunct Whit Walks traditions were joined by a robust outing from The Ramblers. The all-singing, all-dancing, mock-baroque of 'The Adoration of the Chip' contrasted with a fleet of hearses commemorating closed but legendary nightclubs, from The Hacienda to Rotters. The Big Issue Sellers and Unrepentant Smokers provided the smudge of 'gritty northern realism' but the procession concluded with the crowd gleefully following along Deansgate to the sweetly syncopated works of The Buzzcocks and Joy Division. (Figure 3).

Perhaps the performance of Procession did not have the transcendent qualities of a great urban narrative reenactment such as the Panathenaic procession, but it said more about the notions of civic pride and place than the banal receptacles of

spectacular consumption which form Manchester and Salford's recent cosmetically enhanced cityscape. Early in the sequence a truck mocked up as a textile mill complete with a smoking chimney brought the fundamental built environment of the city into the spectators' consciousness, the ur-form of industrial space drawn as a memorial icon through the placelessness of Spinningfields. The root from which urban theatricality springs is representation, and combined with its political dimension such potent performances reinforce the importance of public spaces as an urban phenomenon, uniting the present day to the origins of the city. In this respect the true value of historic examples perhaps lie in their transformation over time rather than the notion of enduring and fixed form.

While the public spaces of post-regeneration Manchester are profoundly disappointing, there are some slight grounds for optimism in the civic quality of a couple of the new buildings which are emerging during these very difficult economic times. The speculative building boom of the 1996-2008 period has ceased its replication of very poor quality office and residential development, leaving a clearer perspective on the achievement of architectural quality for the stewards of some of the city's more enduring institutions. One example is the new building for Chetham's School of Music by Roger Stephenson, which occupies a roughly triangular plot in central Manchester squeezed between the medieval remnants of the original Chetham's buildings, the facade of Victoria Station and the featureless postmodernism of the Manchester Evening News Arena. The new building asserts an independent urban presence, solidly defensive in character and connected to the school's medieval origins via a footbridge, which evokes a definite identity for this significant civic institution.

The new headquarters building for the Co-operative will itself be the focus of a major urban regeneration project on land accumulated over half a century by this major financial institution with many subsidiary businesses. In strong contrast to their neighbouring international style modernist headquarters from the 1960s (by G.s. Hay and Sir John Burnet, Tait & Partners) for a long period easily the tallest building in the city, their substantial new institutional home is framed around a glass-roofed atrium at the centre of a rounded triangular block, designed by Michael Hitchmough of 3dReid Architects.

Despite their very different individual architectural characters and contexts these two buildings hold out the promise of a return to urban order. They adopt relatively conservative strategies to their urban situations, filling the historic site perimeter in the case of Chetham's and occupying a quasi-axial relationship with its substantial earlier partner in the case of the Co-operative. During the present economic difficulties such contemporary institutional buildings and their attendant spaceswill be of enhanced importance in democratic societies, and the values they represent, rather than necessarily the forms with which are expressed, require protection and reaffirmation.

Bibliography

Rossi, A., *The Architecture of the City* , M.I.T. Press, Cambridge Massachusetts, 1982

Young, L., *Procession: Jeremy Deller,* Corner House Publications, Manchester, 2010

Figure 1 The Oast House, Spinningfields, Manchester

Figure 2 MediaCity:UK, Salford

Figure 3 Jeremy Deller: Procession

Alessio Cardaci & Antonella Versaci
University of Bergamo, Italy

Between heritage conservation and urban renewal. A case study: Paris, from Haussmann to the present day

Introduction

The long evolution of cultural heritage till today's wide meaning is intimately linked to France, where this concept was born in 19th century, during the Revolution, Empire and the Restoration. It originates from its recognition as expression of national identity and progresses through a sequence of legislative acts: initially linked to the preservation of individual monuments, later of the sites and protected areas, and then of the historic centers. This has been done by gradually increasing the reasons for such interest, initially founded on urban décor concerns and finally on the awareness that heritage would be a powerful contributor to social stability and sustainable economic development.
If, in general, this improvement is not very dissimilar from that of other European countries, the "French exception" is here reconfirmed and expressed by vigorous debates and a special attention paid to urban areas to which correspond administrative bodies and specific legal instruments (Choay, 2009). Since the Haussmann's decree of 1852 in which, although linked to a radical need of modernization, the notion of ensemble historique came, for the first time, into sight, France has constantly pursued its innovative vision of patrimoine urbain, by enacting the Malraux law on the safeguarding and valorisation of historic centres (1962) and introducing the zones de protection du patrimoine architectural et urbain (1983). In more recent years, following the guiding principles of the 2002 Solidarity and urban renewal law (SRU), the notion of "heritage" has been integrated into an overall urban vision, striving to bring it into line with town planning traditional data. Moreover, the process of patrimonialization now also concerns many buildings of 20th century, including the big social housing estates created during the Post-war economic boom. Privileged witnesses of the modernization of France (after 1945), the grands ensembles arouse today the interest of some extremely nostalgic person claiming their maintenance.
At a time when the future of its main cities has moved center stage onto French policies and strategies, this work intends to present the conceptual advancement in national urban heritage protection mechanisms and their applications, with special regard to Paris case. It thus will retrace the city's modern developments: from the Grands Travaux to today, through the implementation of large urban projects, the reconstruction carried out after the Second World War, the urban renewal of the second half of the 20th century characterized by extensive demolitions. The objective is twofold: while focusing on the destruction operated on the Capital, it is equally possible to understand the progression of the opposing conservative thoughts. This, because the idea of protection clearly appeared when town's changes initiated to be considered a threat for its homogeneity and historical character (Pinon, 1999, 2011). The ultimate purpose of this paper is to analyze the current situation and highlight the new tendencies in urban (regeneration and conservation) strategies.

1. From the Grands Travaux to the beautification of Paris

Between 1852 and 1870 and furthermore in the following years (but as a continuation of a program dating back to the Second Empire) Paris has been interested by important transformations that shaped its look into the one that people currently know and appreciate. Commissioned by Napoleon III and implemented by the Baron Haussmann, the prefect of the Seine, joint in a shared futuristic vision of the city, the renewal of Paris was based on the idea of developing major road networks, to improve and encourage the circulation.
The so-called grands travaux were also motivated by health and security reasons. During the last years of the July Monarchy, in fact, the improvement of industry and commerce had resulted in a rapid population growth, focusing mainly in the big cities. Factories and ateliers haphazardly peeped out almost everywhere; the workers, forced to live in the same place of production, crowded in historical but unsafely buildings. Already in 1810, Napoleon I in an attempt to improve physical conditions and solve safety problems in residential areas had promulgated a decree. Nonetheless, it is only forty years later, under Napoleon III, that a new legislative act will mark a real progress, also taking into account the "aesthetic value of cities".
If Haussmann's intentions were certainly focused on other issues, however, the embellishment of Paris was somehow still present in his discourse and action (Pinon, 2002). His idea on the subject was based on the principle of the "overall perspective", stressing the need for a coherent vision on the territorial scale. Street blocks had to be designed as homogeneous architectural wholes, while buildings, treated as independent structures, would together create the urban landscape. Haussmann considered that a "monument" was not the individual building but the city itself, i.e. the sum of all its elements.
Therefore, by the decree of 26 March 1852 and the ensuing regulations of 1859 concerning Paris, Louis-Napoleon provided the Administration with special expropriation powers. This instrument also introduced into the French law, the concepts of zones and "urban complexes". In the public interest, it obliged house builders to comply with alignment plans and streets leveling and to require a sort of construction permit; the law also foresaw a mandatory periodic cleaning of the facades. The principles of classical architecture were then recognized and honored. Monumental perspectives (i.e. the Avenue de l'Opera traced in the axis of the famous theater) were opened; streets and squares subjected to appearance constraints (i.e. Place de l'Etoile). But it was only at the beginning of 20th century that real debates between the "conservatives" and the "modernists" would take place.

2. The beginning of safeguarding measures

With regard to the capital, publications such as La beauté de Paris by Paul Léon (1909), Des moyens juridiques de sauvegarder les aspects esthétiques de la ville de Paris by Charles Magny (1911), La Beauté de Paris et la loi by Charles Lortsch (1913) were all focused on urban aesthetics matters. The beauty of cities, and, above all, of a city like Paris, became a key question for artists and men of letters. A new awareness related to the protection of more than just an isolated monument, began to take form and, in compliance with such movements of thought, new laws were elaborated.
In the Finance Act of 1911 a provision concerning the protection of the "monumental perspectives and sites" was included. Subsequently, this new cultural sensibility would also be conveyed in what most people consider to be the first French planning law: the loi Cornudet of 14 March 1919 which created the "zones of architectural protection" in the areas near historic monuments. Later, the law of 2 May 1930 on the safeguard of natural monuments and sites of artistic, historic, scientific, legendary or picturesque interest was enacted. Its 3rd title defined the "protected areas" and entitled authorities to impose constraints on the surroundings of prestigious monuments but also to control the development of villages or small towns. However, based on a very complex procedure and focused only on the buildings appearance, this legislation would be unsuitable for larger urban sites (Frier, 1979). Unfortunately, the idea that the monument could find its ideal set, only through a suitable "isolation", was still so rooted in the mentalities of that time, to allow conservative considerations at urban scale.
Shortly afterwards, nevertheless, new reflections on the subject were conducted by engineers and intellectuals competing on the controversial issue of historic districts conservation. Between the two World Wars, a growing sense of militancy developed in favor of the protection of urban heritage, especially among the members of private associations such as the Parisian Ligue urbaine et rurale. If the position of hygienists slightly softened, acknowledging the need to protect from demolition the groups of buildings (Charter of Athens,1933), the cultural conservative parties continued, slowly but steadily, to gain new consensus.
In 1942, the architect Jean-Charles Moreaux published an essay, prefaced by Louis Hautecoeur, in which he condemned the excessive demolition work around the monuments and supported urban areas safeguarding. By using the expression "insulating a building (...) is to violate the history", he carried out a new vigorous combat against the 19th century's theories. In particular, Hautecoeur, at that time State Secretary for Education, denounced the devastation caused by the practice that used to create voids in front of the buildings of the Middle Ages, i.e. the square of Notre-Dame de Paris, widely considered as the epitome of the space "that should not have been cleared".
During the Vichy regime, substantial changes were then made to the legislation. The above mentioned reflections led, in fact, to the approval of the law of 25 February 1943. This act amended the1913 one on Monuments Historiques, which initially provided that the designation as monument classé could extend to buildings or vacant lots located within the abords (environs) of a monument classé. The 1943 law assimilated to the concept of monument even its urban environment. It also imposed a supervision and control system on projects related to buildings located within 500 meters of a historic landmark and within its field of visibility. The same year, the essay Destinée de Paris became a kind of manifesto for the safeguarding of the historic quarters, finally considered as essential and active entities within the towns. After years marked by radical demolition operations, the ilôt n.16 situated in the Marais district of Paris, benefited from a preferential treatment. The architect Michel Roux-Spitz, responsible for the supervision of the renewal work, focused on the preservation of part of the popular buildings too, as components of the built heritage. A praxis founded in the liberation of the courtyards, in the restoration of the gardens and in the opening of public walkways within the blocks, was developed and considered as the ideal solution to "save the appearances", while keeping intact the historic landscape.

3. From the urban renovation to the protected areas

In the first years after the World War II, France experienced a serious housing deficit, requiring a massive building policy. The Government, in the purpose of rapidly modernizing country's infrastructures to enhance economic growth, introduced important changes in the new 1958 Constitution which gave life to the 5th Republic. In the same period, the first Code de l'Urbanisme was created and, the so-called urbanisme opérationnel (i.e. characterized by a proactive approach rather than just regulatory and reactive), launched. After a long period devoted to the development, in the cities suburbs, of the ill-famed grands ensembles, France was constrained by the scarcity of land, to look again towards the old districts, trying to remake cities on themselves. To this end, the decree of 31 December 1958 concerning urban renewal was proclaimed, offering both new opportunity and financial means to clear inner-city areas (the îlots insalubres) and to replace them with new structures. Unluckily, this procedure was undertaken through brutal actions that, breaking with the existing urban fabric, left deep scars on the cityscapes.
Actually, since the theory proposed by Le Corbusier in 1925, French architects had envisaged to quickly resolve Paris unhealthy problems by radical urban renewal processes, like those already developed for the suburbs. The Plan Voisin (1925) proposed demolishing of the whole Marais quarter (described as antiquated and unhealthy), and its reconstruction as a new commercial neighborhood with eighteen skyscrapers together with the rebuilding of a separate residential neighborhood to its west (Rodwell, 2007). If this project was never carried out, it still inspired the interventions undertaken in three other areas of the French capital aiming at reestablishing more livable and healthier areas: the Place des Fêtes located in the 19th district, Beaugrenelle in 15th and the Olympiades in the 13th.
By chance, very soon it appeared that, due to the comprehensive character of the operations made possible by this legislation, good blocks were being demolished together with the bad ones. Hence the idea of rehabilitating whole urban areas evolved, together with a major concern about the historic districts protection. From these preoccupations flow the 1962 law, which introduced the concept of secteur sauvegardés: homogenous areas designated when having a character of historic or aesthetic value or such to justify their conservation, restoration and enhancement. This instrument was conceived in order to limit the systematic practice of renewal of that time, reducing the number of house demolitions and the phenomena of specialization and spatial segregation, while launching urban regeneration projects. If the previous legal texts operated in a sort of closed circuit based on constraints and prohibitions, this innovative law aimed at preserving architectural and historic heritage and improving the living and working conditions of the French people. Its 1963 implementation decree introduced the Plan de Sauvegarde et de Mise en Valeur (PSMV), a kind of master plan characterized by a cultural "vocation", imposing strict controls on all works undertaken in the designated area, creating obligations for both public and private sectors and opening possibilities for the release of subsidies. However, despite the original objectives proposed by the loi Malraux, its first implementation decade was characterized by the mechanism of ilôts opérationnels that, based on large-scale thinning interventions have undergone profound changes in whole historical quarters and transformed their urban design. These procedures have also led to numerous problems at the social level: in particular, they often caused the abandonment of these territories by the poorest populations, due to the increased costs of renting and/or sale of restructured buildings.
This is what, for example, happened in the Marais district in Paris, one of the first secteur sauvegardé in France, located in an area covering 126 ha, between the 3rd and 4th arrondissements. Until the early 18th century, it was the fashionable aristocratic quarter of the French capital. A century later, it became an artisan sector, and the former hôtels particuliers were transformed into workshops and apartments; their courtyards often built over to form warehouses. By the end of the World War II, the Marais had become seriously dilapidated: around 60% of its dwellings lacked toilets, 30% running water; and 15%, electricity (Rodwell, 2007). Designated in 1964, the PSMV was approved only in 1996, after several difficulties. Restoration works caused a big change in the social composition to the benefit of the wealthier classes and the disappearance of much of the quarter's small businesses. They also sometimes produced contradictory results at architectural scale: many stylistic restorations and falsifications, grafts of new construction on the ancient architecture, not always carefully screened in their modes of expression (Fig. 1).

4.Towards a sustainable conservation in historical cities

At the beginning of '70, the secteurs sauvegardés policy has been radically called into question. The first PSMV were reviewed and their regulation mitigated. Moreover, in the following twenty years fundamental changes in the protection of the built heritage, as well as in urban planning and in attitudes towards architecture, were made. They were, essentially, a reaction to facts which garnered national media attention and public opinion: the large developments of the 1960s such as the Montparnasse tower in Paris, numerous housing estates throughout France, and the demolition in 1971 of the Pavilions in Les Halles built by Haussmanian architect Victor Baltard.
The French decentralization policies undertaken in the years 1982-1983, also resulted in the improvement of heritage legislation that further expanded its geographical coverage not only to architectural groups but also to large urban, rural or natural sites. The law of January 1983 introduced the Zones de Protection du Patrimoine Architectural et Urbain (ZPPAU) to enable the protection and management of the urban and rural heritage, of built areas and landscapes, on a contractual basis, allocating the responsibilities between central government and local authorities.. A further law of 1993 extended the protection to landscapes, adding the word paysager to the tool (ZPPAUP have recently been renamed aires de mise en valeur de l'architecture et du Patrimoine).
In December 2000, the French Parliament voted the "Solidarity and urban renovation" law (SRU), in order to deeply renew national planning tools and rules. Its great ambition was to organize the development of French cities, towns and villages, based on habitat, planning and transportation. This policy introduced the term "urban regeneration" and aimed at upgrading degraded, abandoned or impoverished urban sites by the implementation of the principles of mixité sociale and urban diversity. Its main purpose was to correct what was regarded as past mistakes and deal with new problems (Jaquot,1992). The SRU also introduced the plan local d'urbanisme (PLU) to simplify the whole process and so reduce the complexity of the local plan. This instrument divides the commune into four zones, one of which - the N zone - concerns protected areas where no new construction are permitted by virtue of their sensitive historical, ecological or environmental nature. Because of this approach, the PLU can be considered as a third mechanism concerning the safeguarding of urban areas. Thanks to its easier elaboration and adoption, the question arises as to whether this is the urban planning tool to which will be assigned one day, the protection of historic centers in France.

Alessio Cardaci & Antonella Versaci
University of Bergamo, Italy

Conclusions

The PLU of Paris has been approved in 2006 and, in order to comply with its strategy and orientations, the PSMV of the Marais district is now under revision. The new version would contemplate a most modern and extensive protection vision, taking into account the city's needs in terms of housing, diversification of urban functions and sustainable economic development, as well as its necessary ancrage dans la ville de demain (fig. 2).
In the case of Paris, as in general everywhere in France, urban conservation policies are heading towards simpler procedures, really focused on the people who live in (and use) the historical centers. Their re-appropriation by the poorest families and the integration of patrimonial component within the metropolitan urban policies are regarded as "essential elements" in the relationship of civil society and the process of democratization.
In recent years there has been a vigorous revival of urban renewal procedures through traditional practices of demolition, especially related to the urban ghettos (the 2003 Law for the City and Urban Renovation set up a five-year program of renovation) or to other expressions of the architectural culture of the second half of the 20th century, considered as a "shame" by the elite of the country (see the demolition of the Forum des Halles shopping center begun at the end of 2011. However, now France seems to move towards more equilibrated and concerted policies. The example of the city of Paris highlights a kind of duality in urban strategies, even if based on a single metropolitan project. On one side, the safeguarding of historical buildings and centers is clearly affirmed by the Government and Municipalities. On other side, urban renewal operations are carried out in both peripheral and central areas.
The future of Paris is moving in balance between these two aspects. An audacious Paris is thus expected, as shown by Nicolas Sarkozy's presidential ambition to reinvent a greater Paris. Forty years after the approach launched by General de Gaulle, France seeks to transform a vast region, larger than the département of Ile de France, into a model city for the 21st century, sustainable, visionary, "post-Kyoto" and polycentric. At its center, it would of course be Paris, le Vrai, le Beau, le Grand.

Legenda

Fig. 1 Grafts of new construction on the ancient architecture of Marais.

Fig. 2 The PSMV of the Marais district under revision.

Bibliography

Choay F., *Le patrimoine en questions*, Paris, Seuil, 2009.

Frier P., *La mise en valeur du patrimoine architectural. Les monuments historiques et leurs abords*, Paris, Moniteur, 1979.

Jacquot H., *D'un urbanisme de séparation à un urbanisme de mixité*, in «Droit et ville», n. 31, 1992.

Pinon P., *Paris, biographie d'une capitale*, Paris, Hazan, 1999.

Pinon P., *Atlas du Paris haussmannien*, Paris, Parigramme, 2002.

Pinon P., *Paris détruit. Du vandalisme architectural aux grandes opérations d'urbanisme*, Paris, Parigramme, 2011.

Rodwell D., *Conservation and Sustainability in Historic Cities*, Oxford, Blackwell Publ. Ltd., 2007.

Versaci A., *L'origine des secteurs sauvegardés. Intentions et difficultés dans la mise en place des premières opérations*. PhD thesis. Université Paris 8, 2005.

Francesco Collotti- Serena Acciai
Università di Firenze, Italy

The case study of re-constructing the Cambel's Yali at Bosporus

Research's pilot project in cooperation with BU Bogaziçi University (Prof. PhD. Asli Özyar, Prof. PhD. Paolo Girardelli), developed by Department of Architecture drawing/survey history design of the University of Florence (Prof. Arch. PhD Francesco Collotti with Arch. Serena Acciai).

Keyconcepts

Architecture, always between type and site specific settlement
Construction, not far from re-construction?
Memoria of the past is the building material and the energy for the actual transformation.
Is the antique still working?
The presence of antiquity is project-forming
Learning from the past, used as building material

Statements

according to the nature, never against
listening to the topography
seeking the way of the water

Foreword - Istanbul and Sedad Hakki Eldem, the past as building material

Istanbul, the city where geography provokes history wrote Brodskij Town that is built up upon herself *and that lives as she always has lived, not by substitution but by addition*. Town where the ancient is truly a source of design, *whose karma is in being a crossroads of civilization*, that Bridge that Pamuk too sees in his Istanbul[1].

In this port which is in reality a mosaic of ports, in this city made up of many cities that in the end are only one, there exist characteristics which distinguish the architecture: above all the constant presence of water, even as a horizon which runs through the constructed fabric, and then the legacy of the ancient city, that is the erosion of classicism as a principle of architecture.
Sedad Hakki Eldem, architect of Istanbul, who worked *for and with* Istanbul for all his long life, realized in the metropolis on the Bosporus his greatest architecture. Fragments of constructed city which are integrated as contributions of Modern into that genealogy of architectures that lead to the evolution of the city in time.

This research and the here presented pilot-project have their starting point in the PhD Research developed in our Doctorate School by Serena Acciai, focusing the case history of Sedad Hakki Eldem, architect of the turkish Modern[2].
Aristocratic architect, descendent of a wealthy Ottoman family, Eldem was educated between Munich and the Academy of Fine Arts of Istanbul and early in his career began to design the great architecture of the city, beginning with the Topkapı Palace. Eldem read his city as an Ottoman but also and above all through the surveys, drawings, and engravings of Western scholars[3].
Particularly important are Müller-Wiener, German archeologist who discovers by surveying all of Sultanahmet, thus bringing the past to life[4], and I.Melling, German architect who in the XIX century arrived in Istanbul for a brief stay and remained 18 years to sketch views of the Bosporus.

Melling worked as Imperial Architect, not only engraving many detailed drawings of the Sultan's palaces, Ottoman society, and representing some views Constantinople and its environs, but also the architect who was committed to build pavillions, furniture and palaces on the Bosphorus shores for the Sultan's sister.
On the surveys plans of the archaelogists Sedad Hakki Eldem traces his proposals or Istanbul.

Following the Melling's engravings Eldem starts his research/survey/project of the Bosporus' shores[5].
Eldem was intimately involved in the architectural and urban experience of the city and her memory. He worked for Istanbul through those elements which A. Rossi defined constitutive of the architecture of a city- *monuments and houses*- and today his works remain scattered throughout the city as exemplifications of the image of the epoch and society which Eldem wanted in a way to capture and make available to the masses.

The experience of ottoman house

Starting from the experience of Istanbul and extending the research to a human settlement at geographic scale, Eldem wrote about the Byzantine influence and wondered what contaminations and suggestions the Ottomans might have found before becoming Turks, seeking and investigating as always the typology of the Turkish House.
The Ottoman town is by him described as *fragments of imaginations*.

You could catch glimpses of the houses over their high garden walls, and discovering views of a courtyard through open gates. The inhabitants of these houses would generally ask you in, and show you higly-decorated rooms, or take you to sofa-halls, laid with solid beams scrubbed white as ivory over generations[6].
Eldem continually wonders about the work on the building type of the Turkish House. TURKISH HOUSE? A "Western construction"? An open question… as is the nature of the term "Turkish" employed by the Europeans to indicate the cultural and religious ethnicities of the heterogeneous population of the Ottoman Empire.
The typical Ottoman house has specific characteristics that give it its peculiar place in the universal history of home types.Its origins and its relationship to the house types of the neighboring areas make a fascinating case study for the understanding both of the cultural phenomena of the Ottoman universe and of the processes involved in making architecture in general, Ottoman or not[7].
The experience of architecture oscillates constantly between the generality of type and the specificity of site. We have to critic the concept of context and mannered environmentalism. The traits of type and the constituents of the site should remain inseparable. Composed, in other words re-composed.
According to Maurice Cerasi the open question is that *the Ottoman house was a synchretic product of a multiethnic society from the seventeenth century onwards, with the imperial court acting as a powerful catalyst*.

.. the relationship of house type to urban structure and urban culture is obviously very important in Ottoman towns no less than in other cultures.

The Ottoman house: a border wall defining a garden, the wall is so sized and shaped to resist against earthquake, the timber structure of the house, fragile and flexible at the same time, covers only a part of the garden: a light wooden-frame construction with brick or earth infill is set on the stone walls.
The houses seemed to be set on retaining walls or on the ground, any sense of permanency was rare: this is a concept of settlement connected to the institutional and psychological context of Ottoman society[8].

A garden courtyard (more garden than courtyard) is the center of the family life.
Organization and volume composition resembled the Far Eastern pavilion systems.
Funtional spaces are at the ground floor level or in outbuildings in the garden.
The upper floor is a cluster of square or rectangular rooms/oda, unmarked by functional specialization but defined by elements such sequence of windows, niches and walled cupboards, fireplace, symmetrical ceiling decoration with central focal point, perimeter seating.
The ottoman house is what in french language is called *savoir vivre*. First of all it is a way of life, is a lifestyle, is a way for pleasant life.

The yali architecture between east and west

In the general and long-lasting experience of Istanbul as Byzantine and - later - Ottoman town, the human settlement and the creation of a landscape along the shores of the Bosporus is a unique and extraordinary artifact.

The yalı architecture (system of building and sequence of gardens, walls and terraces) is at the same time type and site specific principle of settlement on the Bosporus. The recent chaotic development of the channel shores is forgetting the ancient principles which ruled for centuries the Istanbul's extension eastwards, creating a pleasure's and representative space's system (palaces, mansions, gardens, terraces) integrated to the pre-existing small villages.

The yali architecture in the Bosphorus is a settlement's principle, continuing, organizing and in work setting an original greek byzantine landscape marked by small objects, water streaming downhill, systems of terraces probably erected by peasants.
The yali architecture, figure between Ottoman tradition and european architecture is a particulary experience in the controverse westernization of Istanbul.

The history of settlement along the shores of the Bosporus in the Ottoman period is rather exceptional in comparison with standard aspects of Ottoman urban culture. In the major centers of the Empire, the residential fabric was organized in rather introverted districts or mahalles, with limited architectural display of social status. Instead, the topography of the Bosporus would be exploited by local and foreign elites of the eighteenth century to construct a veritable showcase of social representation and urban rituals, generating something comparable to a broad boulevard in a baroque European city[9].

The huge work on the yalis proposed by Sedad Hakki Eldem consists not only in built examples but also in few important contributions of scientific literature, where he involves his student's classes in reconstructing the often lost landscape of the Bosporus[10].
Sedad Hakki Eldem investigates the origins and the characteristics of the ancient and old buildings which might be read/reread in a modern light. Do the great buildings of the past remain in Istanbul as sorts of footprints in the successive design of the city? Does that manner of constructing the waterfront, the Emperors' Palaces, remain in the history of the identity of the buildings on the Bosporus?

It is certain that with his endeavors (the systematic classification of the architecture of the Bosporus and the establishment of survey and design seminars for students of the Academy of Fine Arts of Istanbul, among others) [5] and with his designs for the new yalı on the Bosporus, Eldem contributed in a decisive manner to the memory and the acknowledgement of the highly particular value of this architectural heritage.

In fact it is not a coincidence that the first representations of Turkish houses in European publications coincide with the blossoming of exoticism and the discovery of the different as a central point in the self-definition of the Enlightenment, and it was precisely the publication of the work of travelers and artists such as Allow and Bartlett and the already above mentioned Melling that dictated the first panoramic views of the yalı, those grand wood dwellings along the Bosporus.

That Eldem took as an initial source of inspiration for his work a copy of the *Voyage pittoresque de Constantinople et des rives du Bosphore* of Melling indicates the importance of Western representations in the formation of the concept of the Turkish House and the importance of intertextual references.
It all begins with the Amcazâde Hüseyin Yalısı, structure dating to 1689 which can be defined the archetype of this building[11].
The building which can now be seen on the Bosporus, near Anadoluhisarı, is only a fragment of the original and elaborate plan of the summer estate of the Köprülü family, organized according to the usual disposition in *selamik* and *haremlik*, here however placed far apart from one another.

All that remains of this constellation of architectural elements is the building with a central plan which rotates about a fire while all around the *divanhane*, a great room made up of low seats placed under the windows that repeatedly open onto the sea, unfolds.
All comes from the Orient wrote L. Semerani ["*and the sensual, magic, and illusionary essence of ancient architecture is hidden*"][12] but in this building on the Bosporus all is still manifest; in fact it remains throughout the centuries as an incunabulum of Ottoman architectural art. From the archetype to the realization of a modern interpretation of these residences on the Bosporus- Eldem in the 60's finds himself with the opportunity to design new yalı on the Bosporus for that new, illuminated clientele, industrialists and businessmen who were the natural evolution of the Ottoman elite and who had renewed the practice of the dwellings on the water, that manner of living on the water's edge treating the Bosporus almost as a "theater of life", comparable in this to the Grand Canal of Venice.

Although these commissions engaged Eldem for individual buildings, at a certain point their number became so great that the context could no longer be confined to the site of each yalı; it inevitably became a more choral question, or rather the image of the skyline of the Bosporus through a reconstruction of fragments of the two banks wherein the yalı were the principal element.

The case history of yali cambel

In the main stream of researches supported by the Department of History of the BU Bogaziçi University (Prof. Özyar, Prof. Girardelli), the Department of Architecture *drawing/survey history design of the University of Florence* (Prof. Collotti with Arch. Acciai) is developing the pilot project for the refurbishment of the Halet Cambel's yali in Arnavtkoi, on the European side of the Bosporus.
The most striking feature of the Cambel yalı is that it develops the original type of coastal settlement in its ambivalent, urban and rural dimension.

On the top, strawberry fields of the typical Bosporus sort cilek.
For similar estates, access to the shore was essential for both infrastructural and prestige reasons. Equally important was the inclusion in the property of a large portion of land, to be exploited for both social and productive, agricultural purposes[13].
Part of the reasearch is the survey of the garden, of the walls's sequence and trying hypothesis about the water's system flushing downhill. As in the byzantine tradition a water reservoir was provided on the top of the property, maybe connected with a watervaine streaming on the flanks of the Bosporus topography.
The by us directed building-site started the last late november. First of all we needed trimming the overgrown small plants and cutting not authocthone trees.

Focus of the project is the compatible reuse of this place as studies center of the Boğaziçi University, refurbishing the sequence of terraces as *mesire* (collective garden surrounded by walls).
Conservation of the heritage by means of the project:

construction is, according to us, not far from re-construction.

Conservation, maintenance and the compatible reuse of the living heritage and of the cultural landscape is the mission, therefore this project consists in:

rediscovering the way of the water

conservation and restoration of the terraces

maintenance of the complex system of retaining walls and draining net

disveiling the original topography as spectacular *point de vue* toward the surrounding landscape

re-construction of the underground system of baths and spaces, especially of the *serdab* the Persian declination of the Turkish bath

replanting of the original autochthone trees.

In this way we are re-discovering this garden maybe once belonging to the Sultan's gardener.
And all this learning from the past used as building material
according to the nature, never against;
listening to the topography;
seeking the way of the water.

Francesco Collotti- Serena Acciai
Università di Firenze, Italy

The image of this contribution is the separated uploaded poster.
Legenda of the poster:
Cambel's yali at Arnavtkoi, beginning of XX century (left – source DAI Istanbul) and survey/interpretation by F.Collotti and S.Acciai 2011 (right). Sketch of the elevation in gold (S.Acciai). All this pics free from reserved rights.

Notes

[1] Pamuk O., Istanbul, Einaudi, Torino 2008

[2] S. Acciai, Byzance - Costantinople – Istanbul: per fragments of generous ideas; the case study of Sedad Hakki Eldem (Doctorate School in Architecture, design and history of the Arts at the University of Florence), results partially published in Acciai S., Ultima fermata Costantinopoli - last stop Costantinople in "Firenze - architettura" n.1/2011, Firenze University Press, Firenze 2011.

[3] Eldem E., Tanju B., Tanyeli U., Sedad Hakkı Eldem, I: Early Years, Garanti, Istanbul 2008;

[4] Eldem E., Tanju B., Tanyeli U., Sedad Hakkı Eldem, I I: Retrospektif , Garanti, Istanbul 2009; Bozdogan S., Sedad Eldem: Architect in Turkey, Concept Media, Singapore 1987

[5] W.Müller-Wiener, Bildlexikon zur Topographie Istanbuls, Wasmuth, Tübingen 1977

[6] Eldem S.H., Istanbul Anilari (Reminiscences of Istanbul), Istanbul Alarko Egitim Tesisleri, Istanbul1979

[7] Eldem S.H., Turk Evi Plan Tipleri, Istanbul Tekinik Universitesi, Istanbul 1954; Eldem S.H., Türk Evi, Osmanli Dönemi, Turkish Houses Ottoman Period I, II, III Istanbul Taç Vakfı yayını 1984-1986-1987

[8] Cerasi M.M., The formation of Ottoman house types: a comparative study in interaction with neighboring cultures. In Muqarnas XV: An Annual on the visual culture of the Islamic world. Gülru Necipoglu (ed.), E.J.Brill, Leiden, 1998

[9] Cerasi M.M., The formation (see cit.)

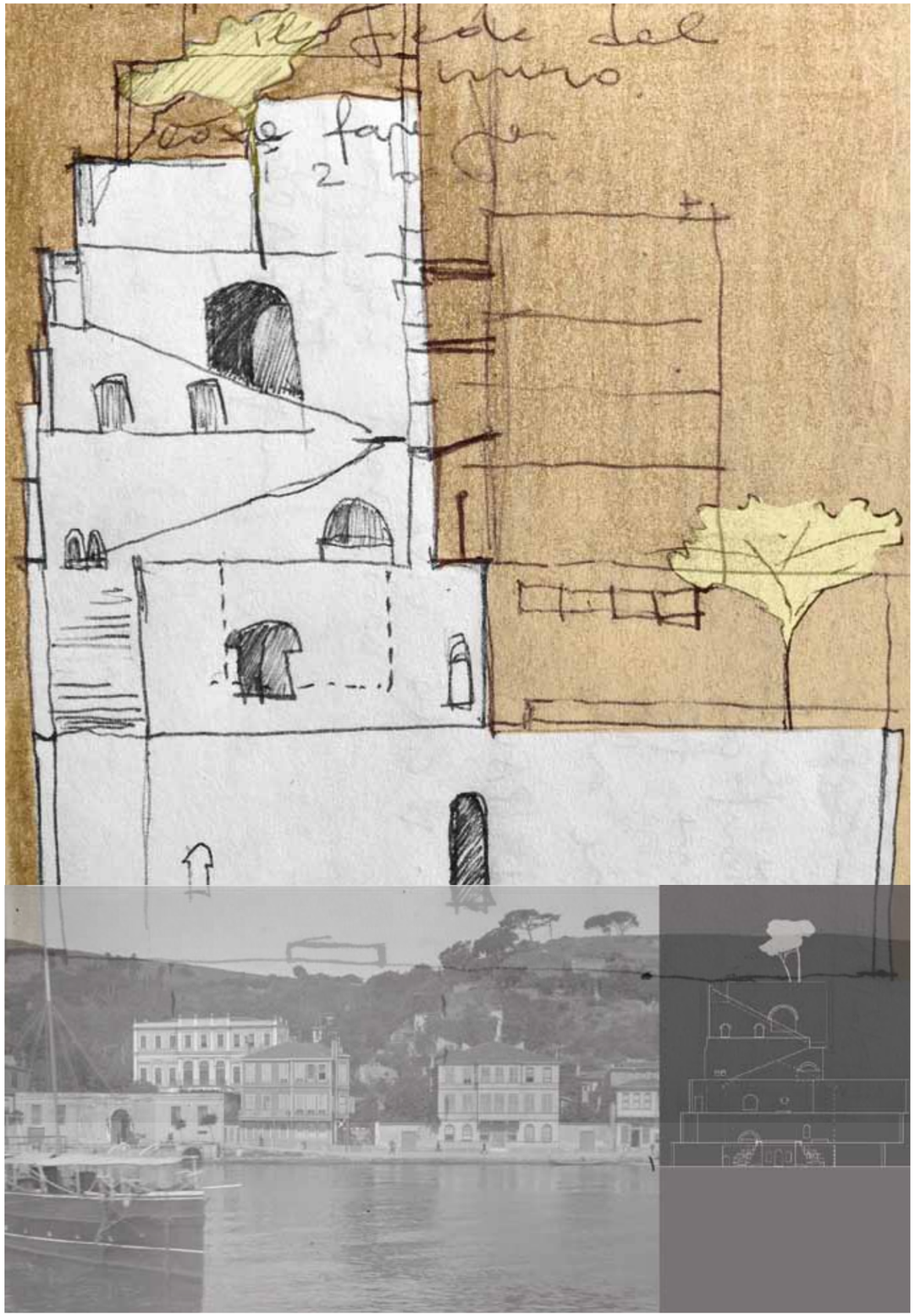
[10] Girardelli P., Landscape in context. Urban and rural dimension of a coastal estate on the Bosporus, lecture at 14th Annual Mediterranean Studies Congress – Ionian University, Corfu, Greece (May 25-28/2011)

[11] Eldem S.H., Le yali de Koceoglu a Bebek sur le Bosphore, Vehbi Koc Vakfi, Istanbul 1975; Eldem S.H., The yalis of the Bosphorus - Anatolian side, Vehbi Koc Vakfi, Istanbul 1993; Eldem S.H., The yalis of the Bosphorus - European side, Vehbi Koc Vakfi, Istanbul 1993

[12] Unver S., Eldem S.H., Amcazâde Hüseyin Pasa Yalısı – Istanbul, 1970

[13] Semerani L. (editor), La casa forma e ragioni dell'abitare, Skira, Milano 2008

[14] Girardelli P., Landscape in context (see cit.)



Ester Dedé
Politecnico di Milano, Italy

Spontaneous public space: resource or nonsense?

"Build fewer, but learn to live in a different way. The slum dweller, the farmer, the penniless, who lives in the called «exotic» country, is reinventing the way of living." [1]

Yona Friedman, 2009

Foreword

Since the middle of what Hobsbawm dubbed "*short century*" we observed a gradual deconstruction process of the urban as traditionally conceived: from the modern city, in which urban planning use to implement control, rationality and space measurement system, we have passed to the contemporary metropolis, place of fragmentation and indefiniteness allegedly unable to find policies that meet the social demands coming from their citizens.

Many critics have linked this loss of identity to three macro-factors: globalization, computerization and urban sprawl (Secchi, 2007) causing the individualization phenomenon, which is the basis of the contemporary crisis.

Individualization caused by the birth of the global economy that alters the social frame and changes the way in which *we produce, we consume, we handle, we inform us and we think* (Borja-Castells, 2002).

The city offers increasing opportunities (employment, training, entertainment ...) but, in the same time, it develops urban unease, social segregation and retreat into private life (Borja, 2006).

Individualization within the boundaries of the network *extraterritoriality* that transform human beings into pseudo-citizens of an *electronic republic* and alters space-time relations unbind people from the place where they live (Maldonado, 1997 - Bauman, 2006).

Individualization in a *built continuum* that prevents people from setting in a defined urban space and lead them to a sense of *rootlessness* (Gregotti, 1965 – 1991 – 2011) and to find a refuge in their own little part of *villettopoli* where they live or in exclusive areas, *gated communities, barrios cerrados, residence blindati*, with guarded entrances and CCTV cameras regulating and monitoring life.

Within the urban, this has led to the crisis of the concept of public space in its two aspects of *physical environment* with extension, limits and drawability and *public realm*, the social background that is not measurable with the Euclidean metric (Choay, 1992 – 2003).

This process has been affected by the economic market: a dramatic growth in the number of enclaves and thematic parks that become gathering places has deprived the centre of the city of its role. But whereas, historically and by its own nature, a public space is a place of free activities and social initiatives, the contemporary public spaces – often privately owned – are regulated by marketing strategies and are based on individual control.

Several research works have emphasized that the consumerism has been handed to citiziens as a response to the crisis when, in the 60s of last century, many squares had become sites of protest and clash (Harvey 1989): a tought public order situation has been dealt through sparkling lights and CCTV cameras. And so the role of public space has been undermined by the loss of its inner meaning: a sense of belonging, the public realm.

Other spaces and spaces other

In a crisis involving more and more urban areas, contexts other emerge in which the sense of belonging is still present: the municipality refuses to aknowledge them and also fails to recognized them as part of the urban areas. They are external, they are outside, they are - just - *other*.[2]

"*These aren't good here, put them there, give light to those, nothing to other*".[3]

Critique has dealt for several years with the architecture of the urban public space, with the *forms of the urban public space*, with the *crisis of urban public space* but much less, and only for a relatively short time, with the public space *other*. It has not monumental forms and it is experienced by a population of outsiders who, although invisible, are essential for metropolis survival because they are a source of cheap labour for many of consolidated city's activities.

Globalization, rather than proceeding in line with a universalization phenomenon – of rights, freedom, democracy (Baudrillard, 1996) – nourishes a unbalance development resulting in spatial polarization based on migration (from country, from poorest region, from urban areas with expensive rental fees…).

Not only the most peripherical areas (especially considering the sprawl city in which the centre-periphery dialectic is virtually lost) are involved in this process of growth and transformation process which gives birth to new diverse worlds (Scandurra, 1997) where the formation condition of the space (public, private…) *was "initially ignored, then fought, lastly recognized and identified as a «problem» that however integrates wide arrow of knowledge useful en route to a more humane environment […] because during the birth of the illegal city some networks of interests, solidarity and activities were generated as well."*[4](Piccinato, 2002)

The formation of pockets of marginalization and degeneration in areas with limited investment opportunities by the market and rise of spontaneous self-built settlements have, in many instances, sparked form of a police-like control by government worried by the idea of a new form of public space as a meeting and self-expression place.

Through military and economic power "*the serenity of the Generic City is achieved by the evacuation of the public realm*" (Koolhaas, 2006), by the ousting of everything that may be problematic, that may create a conflict, that may not be easily classified and defined. It seem as if the aim is to create a perfectly ordered world that resemble such movies as "*The Truman Show*" (Weir, Usa 1998): aren't outlets and theme parks pretty similar to that after all?

"*Disneyland must be regarded as the most important single piece of construction in the West in the past several decades. Instead, single-handed, it is engaged in replacing many of those elements of the public realm that have vanished in the featureless private floating world of southern California, whose only edge is the ocean and whose centre is otherwise undiscoverable. Curiously, for a public place, Disneyland is not free.*" (Moore, 1965)

A case study: villa 31 in Buenos Aires

We have chosen to focus on a single case study for illustrative yet partial purpose; it's impossible to generalize because of the unique nature these issues having regarding the urban, spatial and social context in which they arise; however this is a remarkable case in starting up the debate and raising new questions about public space as it is experienced in spontaneous settlements.

An embarrassing informal

Villa 31 is a Buenos Aires urban *island*, an area in which the nonsense theme can be distinctly felt. It is inside the Retiro district between government agencies, luxury properties, exclusive hotels and the railway station, close to Puerto Madeiro, the town's ancient port area that was involved in huge urban regeneration in the '90s, and is still today a symbol of a public space turned into a lucrative luxury compound for the rich by economic power and rising. (Torricelli, 2009).

It is an *island*, enclosed by invisible walls, full of homes and people; you just don't want to see it because it's a nuisance: only in recent times, it has been drawn into the urban plans and still to this day the area has still with the same colors as the railway station by the territorial search engines.

Actually, from the highway overpass crossing it, you can notice its density made by semi-stable illegal dwellings built by squatters on state-owned land where the government wanted to build a second Puerto Madeiro, just as exclusive as the first one.

Villa 31 evacuation policies have been ongoing since the '40s when the first spontaneous settlements built by Italian workers during the Second World War had appeared; over the years, the local community has increased because of the rural-urban migration that came along the industrial development.

Several ethnic groups have been merged into Villa 31: Peruvians, Bolivians, Paraguayans mingled with Argentines expelled from the growing city.

A mixed group of people who created and preserved a bond with this land strong enough to return as soon as possible after the '70s evacuation campaign.

The first official census made in 2009 as a first step toward the comprehension of the problem, computed in 26403 inhabitants living in 7950 homes on a 0,32 sq km area.

These numbers are alarming if we regard the density would be 85171 persons per sq km![5]

Spatial perspective, sociale horizons

"*[…] searching and being able to recognized who and what, into the hell, is not hell, and to make it last, and to give space to it.*" (Calvino, 1972)

In this picture, we can make two kinds of considerations.

The first is a spatial remark and its aim is to analyze illegal self-built settlement, born without a well-defined urban plan developed though continuous additions, that created a disorganic, problematic and unconventional model with no ties to past experiences. Putting things in perspective, far from the noble savage myth, we can focus on some details, and highlight a possible quality line: the tangle of little streets, marked by one or two-storey buildings, arouses a mazy feeling somehow similar to that of Mediterranean cities and particularly in areas close to the docks.

Moreover some parts of the urban structure boast the status of public space by a specific intent and not only by chance; it is almost as if they have been preserved from saturation by an outsider project that gave them a different role.

"*Loneliness is despised and avoided. The slum dwellers live outside, gathered for most of the time in public space.*"[6] (Friedman, 2009)

An example is the *villa's* market area whose border is made by shelters defining a curve line which forms a broad space (a square?) which is the beginning of a hypothetic path inside the settlement.

This topic lead us to a second, sociological, consideration: how was it possible to preserve a space like that inside an illegal settlement? Can we think it is due to a collective will form?

"*The slum culture has its own conceiving and using public space use. So the street is a natural home extension, not just a transit place but the place where to create bond with neighbours, where to find the expressing chance, the place of the popular celebration.*[7]"

Speaking of that, on June 11th, 2007, when the candidate for mayor, Mauricio Macrì, was just about to proposing new evacuation policies, fifteen priests of seven Buenos Aires slums - two of Villa 31 – published a document that would become a manifest in *defense* of the *cultura villera*.

The text talks about violence, crime and deprivation in villas, but also about the common values shared by the villeros and demands for new urban policies that would'n focus simply on building new edifices and panting old ones all but ignoring the slum culture but that would rather encompass the thoughts and the needs of both the people of the Villa and the official citizens resulting in a common growth and gain.

Actually, in recent years, people living in Villa 31, thanks to their will to change, has created new internal system of relations, stronger than the racial differences; a new awareness has enabled people to get organized in movements able to be heard out of the slum, all around the street of Buenos Aires.

A new feeling of community, a *grupo de vecinos*[8] that has activated many collective actions.

Towards the transformation

In this regards, a number of minor projects (as for scale and emphasis but not as for social significance) activated in the last ten by several NGOs, local organizations and *villa's* missionaries, contributed to these changes in perspective: a PhD students group of the *Universidad de Buenos Aires* in 2007 proposed a workshop for slum' youngsters.

The formal purpose was to map Villa 31 area and build a model to be showed in an exhibition.

Actually the truest motive was more profound: giving those youngsters the chance to a fresh look at their own environment, the transmission of know-how – the group was given the material tools and the skills to describe the hood – and the brand new awareness then even in a deprived context such as Villa 31 there are some quality sites that can create bridges towards the official city.

More under the spotlights, at the beginning just thanks to personal efforts and then later on thanks to the city hall intervention (*Ley de Urbanización de la Villa 31* signed on December 3rd, 2009), another group coordinated by prof. Fernandez Castro (Facultad de Arquitectura, Diseño y Urbanismo de Buenos Aires) since 2002 has done several researches investigating what would be the best way to intervene in such a troublesome site .

Fernandez Castro points out that "*the main focus of our proposal lies on the spatial components around which the citizenship revolve. Public space, infrastructures, equipments, production areas, are what define the urban social integration and this is the core on which the project should primarily intervene.*

It's all about going beyond the traditional «house» policies understood as mere housing solutions, moving to global policies of «city», where informality isn't an anomaly to remove but the chance of a new way of intervention that offers quality to the socio-spatial layout of the urban structure itself."[9]

They start from the success of "*Favela-Bairro*" program begun in Brazil in 1994: no more projects oriented to the building of new houses, but works focusing on public space; not only water supply, drainage and electricity, but social structures, schools, sport and cultural centres.

In this way, a few mechanisms called *multiplicative* were activated and then, due to government incentives and sponsorship from other stakeholders, it was also possible to intervene on the home buildings.

A process akin to this has been implemented in Medellin, a Colombian city, where investments have been made to built a library and the new State Theatre in a deprived district in order to a economic resources' difference steering, improving the area's general situation.[10]

"*In every city there are qualities are worth to be lived. These are qualities that urban design must not steal*" (Wenders, 2002).

As for Villa 31 in Buenos Aires, after several studies and valuations the designers' team came to a conclusion that it was possible to dispose maintenance, consolidation and improvement avoiding rebuilding for 70 % of homes.

This figure cuts down on the number of newly built houses to be provided and buildings to be demolished in order to open paths and broader spaces, to ensure better health conditions and to reappraise the general design of the site.

As much as the economic convenience of preserving the existing buildings stands out, it is at the same time very significant that strong sense within the community that works of this kind are actually done *for the people and with people*.

In a way, the project assumes that the real renewal resources are already inside the slum: human, social and spatial resources. It is not about enforcing a new project from the above but instead about listening to the real needs in order to troughly exploit the area's potential.

The first step is therefore the consolidation already existing institutions, churches, clubs, cooperatives, local associations and then two projects with great social importance rather then of mere architectural relevance: a school so that people would feel like a part of the city due to the presence of a formal institution, and a memorial building to Father Carlos Mujica memory, *el padrecito*, the martyr priest murdered in 1974 and buried in the Worker Christ Chapel in Villa 31, a site of pilgrimage from all over the city of Buenos Aires.

Besides this, three housing intervention's levels: the first, as we have said, consolidation and upgrading of the existing homes. It is about the southern part and it is particularly focused on the arrangement of kitchen and toilet facilities connected to drainage.

A second level is the design of housing units within a small tissue in the central part of the *villa*, north of the highway: these are single-storey buildings affording, thanks to their alveolar structure to preserve neighbourhood relations among the inhabitants.

The northern area's edge is rather marked by residential multistorey buildings which represent the third level. These structures ensure the necessary response to the housing questions but also define the relationship between *inside* and *outside* of Villa 31, relating with the urban in a different scalar level.

The open space becomes the topic unifying the project's different parts and emphasizes once again its role as place of relationship between the slum dwellers.

The approval of the projects for Villa 31 urbanization and the will to carry out them stated in several municipal guidelines are a good sign that could become very important for other similar situations, not only in Buenos Aires.

The slum population's stance, its ambition to be visible and to transform the *villa* in an urban district, has created the conditions for a real change that will obviously take much time to realize but it represents a new and interesting feature of the slum's culture.

Ester Dedé
Politecnico di Milano, Italy

Conclusions

Beyond the possible forced interpretations and the unavoidable approximations caused by the still little public debate over the issue, this essay tries to tackled the clichés often permeating the topic of informal settlement. We tried to emphasize the role that a new citizenship and social feel may have in the changing process, in the urban design.
We deliberately chose not to discuss the issue in terms of participation, a word too generic and perhaps even misinterpreted in this case: It's not only about involving the slum dwellers in urban redevelopment's processes.
On the contrary the question arises whether we should start from new presumptions instead of the architecture's traditional ones and whether we should merge old principles with a fresh new look at the issue aiming to achieve all the possible improvements in terms of quality that this new approach may present us.
"*Creating means realizing «a new significance» beyond the «limits» imposed by the man, and developing a different way to portrait the reality and the relation among men and between them and nature. It means achieving a critic-thinking alternative to globalization and to the pensée unique that destructures the man and breaks the social bond. It means building a new «house for the human kind» starting from what binds men to their land and to their fellows and to finally abandon those crazy fantasies of destruction we still call «development» and «progress»*" (Scandurra, 1997)[11]

Bibliography

Bairoch P., *Il fenomeno urbano nel Terzo Mondo*, L'Harmattan Italia, Torino 1997.

Balbo M., *L'intreccio urbano: la gestione della città nei paesi in via di sviluppo*, FrancoAngeli, Milano 1999.

Balbo M., *La città inclusiva: argomenti per la città dei pvs*, FrancoAngeli, Milano 2002.

Balbo M., *Povera grande città: l'urbanizzazione del Terzo Mondo*, FrancoAngeli, Milano 1995.

Baudrillard J., "*Le mondiale et l'universel*" in Libération, 18/03/1996, p.7.

Bauman Z., *La solitudine del cittadino globale,* Feltrinelli, Milano 2002.

Bauman Z., *Vita liquida*, LaTerza, Roma-Bari 2006.

Bauman Z., *Voglia di comunità*, LaTerza, Roma-Bari 2001.

Borja J., Castells M., *La città globale. Sviluppo e contraddizioni delle metropoli nel terzo millennio*, Istituto Geografico De Agostini, Novara 2002.

Borja J., "Rivoluzione e contro-rivoluzione nella città globale – ovvero le aspettative frustrate dalla globalizzazione", introduzione alle conferenze di Harvey D. e Smith N., raccolte nel volume *Capital financiero, propriedad immobiliaria y cultura*, MACBA-UAB, Barcellona 2006.

Calvino I., *Le città invisibili*, Einaudi, Torino 1972.

Castro F., "*Anteproyecto Urbano Barrio 31 Carlos Mugica*", in Revista Iberoamericana de Urbanismo - Riurb, Vol. 03, 2009.

Choay F., *Esplacements*, Skira, Milano 2003.

Choay F., *L'orizzonte del posturbano*, Officina, Roma 1992.

Chemetov P., "Gli spazi collettivi della città", in PIVA A. e aa, *Cultura e socializzazione nelle città europee del terzo millennio*, FrancoAngeli, Milano 1997.

Cravino M.C., *Las villas de la ciudad – mercado e informalidad urbana*, Instituto Del Conurbano – UNGS, Hardcover 2006.

Davis M., *Il pianeta degli slum*, Feltrinelli, Milano 2006.

Forni E., *La città di Barman*, Bollati Boringheri, Torino 2002.
Friedman Y., *Arquitectura con la gente, por la gente, para la gente*, Actar, New York 2011.

Friedmann Y., *L'architettura di sopravvivenza*, Bollati Boringheri, Torino 2009.

Gregotti V., *Architettura e postmetropoli*, Einaudi, Torino 2011.

Gregotti V., *Il territorio dell'architettura*, Feltrinelli, Milano 1965.

Gregottl V., "*Un compito per il disegno urbano*, in Casabella, n. 584, 1991.

Harvey D., *L'esperienza urbana*, Il Saggiatore, Milano 1989.

Koolhaas R., *Junkspace*, Quodlibet, Macerata 2006.

Landuzzi C., "Migrazioni e nuovi ambiti urbani", in *Theomai*, n° 08/2003, Quilmes 2003.

Maldonado T., *Critica della ragione informatica*, Feltrinelli, Milano 1997.
Moore C., *You have to pay for the public life*, MIT Press, Cambridge 1965.

Mumford L., *Le città nella storia, Bompiani*, Milano 1981 (ediz. orig. 1961).

Piccinato G., *Un mondo di città*, Edizioni di Comunità, Torino 2002.

Rogers E.N., "Introduzione", in Rogers E.N., Sert J.R., Tyrwhitt J., *Heart of the city. Towards the humanisation of urban life*, Lund Humpries, Londra 1952.

Scandurra E., *Città del terzo millennio*, edizioni La Meridiana, Bari 1997.

Secchi B., "La periferia" in Casabella, n. 583, 1991.

Secchi B., *Prima lezione di urbanistica*, LaTerza, Roma-Bari 2007.

Torricelli G.P., *Potere e spazio pubblico urbano*, Accademia Universa Press, Città di Castello 2009.

UN-Habitat, *The Challenge of slums: Global Report of Human Settlements*, Earthscan, London 2003.

Vyjayanthi R., "Slum as theory", in Lotus n° 143, 2010.

Wenders W., *L'atto di vedere*, Ubulibri, Milano 2002.

Notes

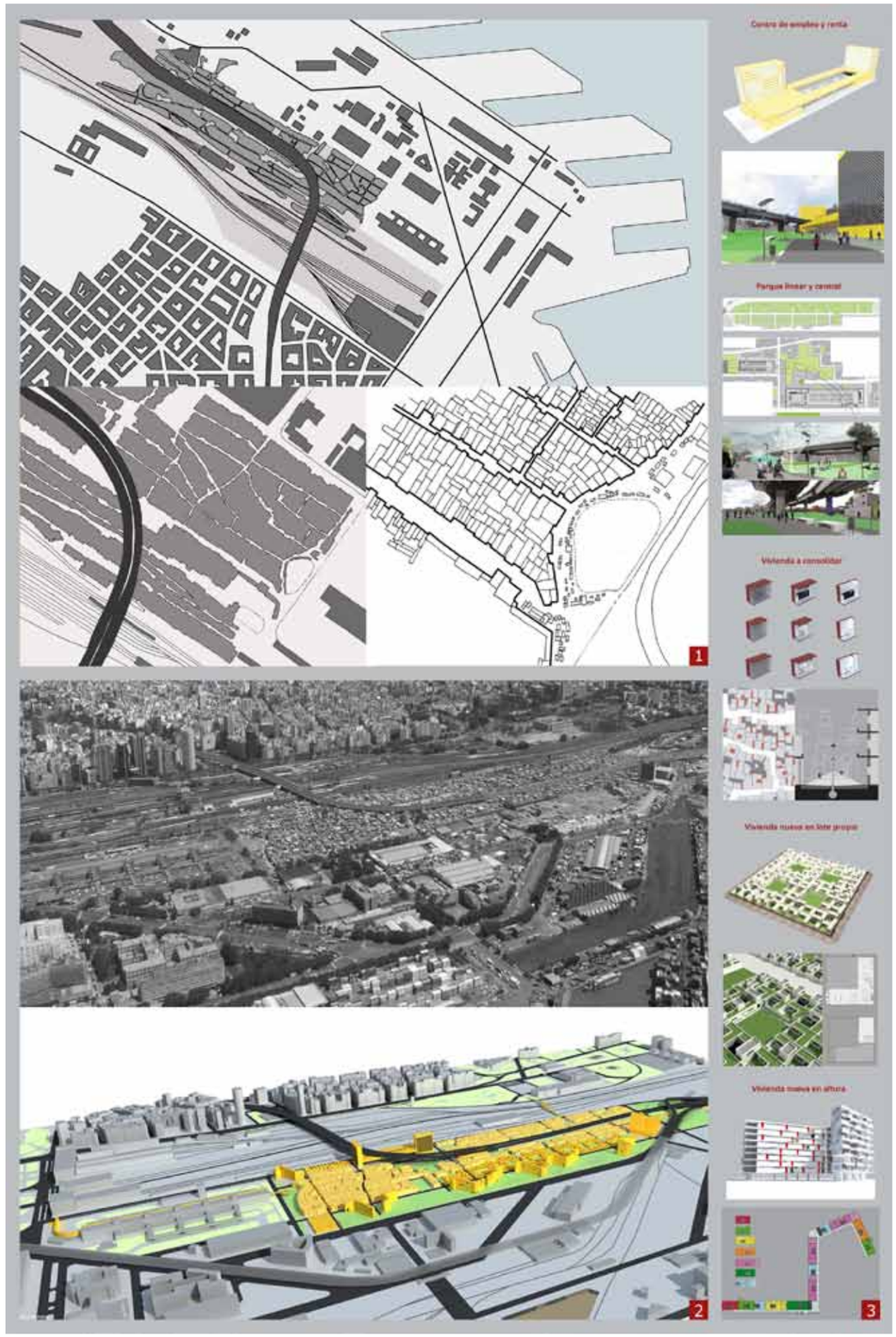
[1] Transltion by the author.
[2] In this regard, the results of the research "Urban Spaces and Urban Models", conducted by the University of the Italian Switzerland in Mendrisio are useful to this work; see: Torricelli G.P. (2009), Potere e spazio pubblico urbano, Accademia Universa Press, Città di Castello.
[3] Alex Zanotelli quoted in Floris F. (2003), Baracche e burattini, la città-slum di Korogocho in Kenya, L'Harmattan Italia editore, Torino; translation by the author.
[4] Translation by the author.
[5] Data taken from "Censo de Hogares y Población – Villa 31 y 31 bis" carried out by Dirección General de Estadística y Censos, Ministero de Hacienda, Ciudad de Buenos Aires, 2009.
[6] Translation by the author.
[7] From text Reflexiones sobre la urbanizaciòn y el respecto por la cultura villeira, signed by fifteen Buenos Aires villero priests, sent to the major on June 11th, 2007 as a villa's culture defending manifest; translation by the author.
[8] Literally: neighbours group; this term is used to indicate the neighbourhood associations spontaneously organized by the resident population.
[9] From the design purpose report "Anteproyecto Urbano - Barrio 31 Carlos Mugica, 2002-2010", project manager prof. Fernando Castro, Fadu, Buenos Aires; translation by the author.
[10] Translation by the author.
[11] Translation by the author.

Captions of images

01 – diagramatic views of Retiro's area.

02 - Bird's eye view of Villa 31's area: current status and view of the renovation project by Fernando Castro's group
(image granted by prof. Fernando Castro, FADU, Buenos Aires).

03 - Villa 31's renovation project: work's levels (image granted by prof. Fernando Castro, FADU, Buenos Aires).



Andrea Di Franco
Politecnico di Milano, Italy

The border as a place of experience

The truth is not a crystal that you can put in your pocket, but a boundless liquid in which you fall into.
(Robert Musil, *The Man Without Qualities*)

1. Liminal Architecture (fig.1)

This paper is oriented to the border as a thematic and architectural space, searching, within the phenomena of temporal and spatial discontinuity implied by this issue, opportunities for the design of places in the contemporary city.

Here, the project expresses its intimate and necessary condition of "experience": summarizing the experimental and developmental nature of the project in addition to its cognitive character.
In the border-place, "limit", "threshold", and "interval" domains converge: areas of transition between different dwelling types and cultures, specified in the various historical periods and in different anthropo-geographical areas. Here, diverging aspects are regulated and recorded: the experience of distinction between the differences occurs in the place of confrontation.

It is the measurement of the interval between discrete domains that clarifies, through the definition of the common boundary line, the different qualities: by virtue of the relational experience, they can find their own identity.

The architectural project confers the boundary of regulating mechanisms, expressed by archetypal figures of the enclosure, the gate, and the bridge. These figures are in charge of regulating the degrees of separation and connection: expressed in different eras and places, by formal and typological hybridization, in numerous forms of dwelling. The habitability character is expressed both externally and internally, outlining specific architectural forms and types in the intervals. Walls, bridges, inhabited gates, in addition to tunnels, passages, viaducts, infrastructure nodes such as stations, airports, tollbooths: paradigmatic places that oversee divergent and convergent domains and organize their own settlement characteristics on the lines of tension, connection or diversion.

Opposites compose dialectic pairs: the specific experience of the limit makes the meeting between individuals and society, private and public, local and global, and between different temporalities. On the border, the relative values are clearly defined, thus raising the question of the possible form of the relation itself.

The different characters are directed to the interlocutory plane of antonymic pairs of metropolitan dwelling, reclaiming sterile discrepancies and composing new promising limit-intersections: natural – artificial; subjective – objective; ethical – aesthetic; sedentary – itinerating; permanent – temporary; local - global. In this way the spatial project has the possibility to determine material to compose the meaning of relational architecture.

Crisis and project, experience and hope, so declare an inseparable dialectic status. Crisis (from the Greek Krìnein: discernment) is the critical transformation, alteration as experimentation of otherness. The recognition of the differences, beginning by the distinction between self and the other, is experience.

The understanding of the complex contemporary urban form follows the space-time boundary between the sedimented figure that resists on the surface of the city and the latent traces that still support it. The sequence of dematerializations, deformations and layering that conform settlement dynamics measures an interval of time from which we can still gather experience. This "search for the city" detects and crosses intervals and borders to focus and to correlate unstable and interlaced structural layouts and periods.

On the approach to the contemporary city track in City Portraits, Walter Benjamin probes the relationship between intertwined spatial and temporal sequences that the dweller and the urban landscape, in a process of research, loss and rediscovery between the different phases of the form and history. Changes of urban places fuse and confuse with the mutations suffered by individuals in the dual, irreversible transformation process that combines and ties them or that mutates and dissolves them.
On this boundary between space and time you search for the relationship between individuals and memory, hidden in the folds, in the subtractions and in the interruptions in the process of formation.

Historically consolidated by the coherence between shared meanings and dwelling practices, the individual-collective-place nexus dissolves: from the "explosive" modernity of industrial societies up to the "implosive" and immaterial of information societies, the urban experience is confused along borders that become uncertain by incoherent, incompatible, overlapping, segregated or incommensurable dwelling uses and ways.

The individual experience, conducted on the common traces of the frontiers of the form, though chaotic and confusing, measures the mutations that are stratified and converging in this relational context: arranged in order to recognize the differences and again, interpreting strategically the relationship between self and the collective memory of the world.

2. State boundary (fig.2)

In the step mentioned before, from modern industrial society to contemporary informational society, increasing the process of emancipation from handicap of matter, first by the moving man and then to the human-sensor of the "City of Bits", finding blocks that resist in the physicality of the elements involved. This transformation process that involves individuals, communities and urban forms, expresses its most radical level of opposition in the limit between materialization and dematerialization.

The transformation of primary practices, in the sense of exchange of intangible goods, services, information and capital, triggers a sort of sublimation, which involves large areas of the dwelling practices.

Exceeding the limit of measure leads to a mutation of the physical state of reality, furthermore, as stated by Bonomi and Abruzzese, the concept leads to Albert Einstein's Theory of General Relativity. In order to explain it, he uses a metaphor in contemporary cities, as a spatial system determined solid body geometry, immersed in a flux system associated with the movement of time and information. Beyond a certain extent it loses its stable geometrical characteristics and "liquefies" its own physical constituents in so-called "mollusk bodies" becoming deformed and fluid by the new dynamic conditions.

As noted by Massimo Cacciari, the inherent contradiction in contemporary cities, attempt to configure both as a place of refuge for a stable and cohesive community and as a plane for fluid and adaptable exchange, permeable and open to continuous hybridization. Such contradiction is already detectable through the comparison between Greek and Roman cities. While the founding idea of the city emerges from the Greek polis, determined primarily by a stabilized place where the éthos of a specific population is reflected. On the other hand, meaning from Roman civitas, which identifies the agreement within which differences converge. In the first case, it is the common assumption that determines and hands down the character, while in the second, it is the common goal: i.e. the project of future citizenship. Both of these cognitions constrain us to pursue a contradictory ideal for the city. Defensive but prone to change; stabilized, measured, enclosed in a well known figure and identity, a "polis" set to a sluggish dwelling, but also delirious, as the "civitas": delirious, overflowing the boundaries marked by the lira, the groove; in order to change, growing to constantly include new inhabitants, new places, new resources and become a metropolis.

Both characters belong to the contemporary city, intrinsically charged with duality, tending to the boundary of an antinomic project.
The boundary place of the dematerialization of the urban body is so desired and feared at the same time.

On the other hand, the "sublime" as a condition contemporarily terrifying and ecstatic is properly a limit condition: sub-limen, a step away from being "beyond measure".

Its original story, in the treatise On the Sublime (Peri Hypsous,) attributed to Pseudo-Longinus, expresses how the emotional state of the reader "frequenter of the sublime", led to reflection, exceeds the measure of canonical rules. The sublime state leads to a delirious reaction compared to the set logic. What is interesting here is to note that this "transfiguration" allows experimentation by the "altered" subject- hence led to "otherness" –of another point of view.

3. Research - experience – landscape (fig.3)

Surpassing the limit leads to discover the terrifying harmony – chaotic, provisional and incessantly in transformation - in the world of Heraclitus: "a pile of rubbish thrown at random"; but making experience and imagining an order ("capable of generating heresies") leads Nietzsche's Zarathustra to the experience of form and beauty: "You (sublime) must aspire to the virtues of the column: the more rises, the more it becomes increasingly delicate and beautiful, but intimately strong and loadbearing."

The alteration of the measure, or the "dynamic sublime" to which Immanuel Kant attains to Greek treaties, in his "Critique of Judgment," is a romantic evocation of the great and terrible power of enormous natural forces. Exceeding the limit opens to con-fusion.

But man becomes aware of the limit and is able to imagine a habitability principle whenever he can trace it back to a measure, he designs it, through ethics as common "logos" to sharing. Then the sublime becomes "mathematical", hence measured: it is understood and dwelled. The experience of understanding an alternate dialectical perspective, leads to ethos (place) of co-inhabitance, beyond the limits of the "own measure" (which Kant might have called "moral stature").

The drift of the common sense of places, the exponential and fragmented diffusion of individual domains, the uncertainty of urban design itself, torn between the aspiration of consolidation of limits and the tension towards the removal of every binding bordering, characterizing the phases, which increasingly persist on the condition of modernity and now on the contemporary condition.

Walter Benjamin's explorations guide us through this sequence between the different forms of urban thought, even before its concrete form. These lead to the meaning of that experience which must necessarily proceed through the least apparent aspects of city and landscape phenomena. Areas where removal processes imposed by the different stages of modernity gradually segregate over limits and margins, as cutouts from figures that resist the progressive "demobilization".

It is precisely in these passages, in these "sublime" landscapes of incomprehensible measure, where we expect to find the issue that links experience, modernity, and urban marginality, enabling them to express their project potential.
The border as a place of experience is explored in Passagen Werk; these are employed as "dialectical images" of the crisis in the transition between past and future, outlining a possible coexistence of opposites.

The town traced by Benjamin, besieged by modern technocracy and by the production and capitalist exchange mechanisms, constant prey of an exhausted present, leads to the "death of experience". But, through the visions translated by Benjamin of Boudelaire's Fleurs du Male, the experience returns. Even though it is a destructive experience, recovered through the immersion in the dark, contrasted and unresolved nodes of the metropolis, it can reactivate the unveiling and recognition of lost places: these are precisely the broken lines of the border and the hidden spaces of the margin and the limit.

The inevitable project inhabits the spaces that appear on the limits of amputations, absences, deletions. The necessary project of the "present" is placed in the boundary between the past and future.

The essence can be found in the clash between oppositional terms: as it can be found in the "reverse" architecture of interior passages, in the inside-outside hybridizations, in the fading past that leaves indelible future traces of their own absence.

This dialectical kind of architecture allows for opposites to coexist: overcoming and recognizing, destruction and memory, and it leads to the only possibility of real experience. In other words, it leads to a truly transformative project in the transition from the present crisis to another form of future.

"Passages" are the place of this transitional experience; they are spaces of transit, ambiguous areas, intertwined corridors of the city's different temporal phases, and hybrid places lying between "the internal and the external". They are both street and home, elongated thresholds, disputed between the city's solid body opacity and the dematerialization of evanescent glass transparencies.

Glass, an "expressive" material of a "new objectivity" revealed by transparency and clarity, is a metaphor for the opposition to opacity of outdated bourgeois city.
It is clarity that dissipates the confusion of the romantic point of view, which includes the measure of precision and sharpness of reason; at least in the assumptions.

Paul Scheerbart's Glasarchitektur transparencies, later translated into the work of Taut and Mies, are expressionist metaphors of unveiling, of the transition from sleep to awareness. The glass as the wall turned into a transparent and breakable element, is the boundary, as in the incipit of Proust's "La Recherche", between reality and sleep; which must be crossed even by means of destruction: as such, the transition from an exhausted and hypostasized passed condition to a new, modern, ideal one.

"Passagen-Werk" are dynamic forms of transit between the spatial and temporal limits of that great stone metaphor of the city: they are the forms of the transformation experience. In these places of fracture – passing boundaries and thresholds- time and space opposites converge and collide: generating the possibility of their commensuration.

The Cityscape traced by Benjamin is a cognitive tool of elevated metaphorical value, leading to extremely complex and differentiated phenomena to a unity of thought and image, and so of project imagination. The urban sections cut by "Passages" reveal an exterior viewed from inside, solving the enigma of a form experienced beginning from its profound logic, depositing urban and architectural matter to reveal confused limits and their interposed thresholds: as places of the "urban unconscious", as internal domains towards which externalities, finally brought to the surface by a new dialectical order, converge.

4. Project of relations (fig. 4)

The cognition of experience conducted so far is affirmed in contemporaneity and especially in that seemingly indistinct landscape with a frame unable to open and close internalities and externalities, center and periphery, city and countryside, while fragmenting disassembled parts as adrift wreckage after urbanizing explosions and implosions.

This perspective searches for critical passages, traced back to residual forms of modernity, suffers form the fracture in the meaning of boundary between the metropolitan area (internal) and landscaped area (external).

Our current "modernity", understood as critical and research contemporaneity, needs experience in order to update the discipline; modulation is the medium of the distance from our internal limits, it is the measure of inherent thresholds in our pervasive fragmentation within the landscape's body, ceaselessly urban.
This time-space interval, in which we are called to imagine the project of relations, is the place where the city's antonyms formalize by own experience; where they experiment their own relative positions and rebuild their assumptions.

It seems that the only way to practice constructively the open system of differences, knowing that a real possibility for architecture to enable relations, is the ability to determine the comparison among the different identities on relative borders.
Experience of the border is distinction of differences, activation of the modes of mutual recognition and, therefore, of the relationship between forms, subjects, and communities.

In this sense, boundary expresses a “place of knowledge”, of painful and destructive awareness: think about ill fated Adam and Eve, on the border between the divine/sacred and the earthly/contaminated context –consequence of their irreversible violation.

Experience of limits is a specific tool of knowledge for a specific project. It is the framework through which you can trace the theoretical lines related to the method. These lines are not ideal, nor general, nor universal, but they base and acquire project material exclusively from the specific cases in which they can be expressed in the relationship between different realities.

In this sense it’s interesting to consider American philosopher Richard Rorty’s pragmatic point of view, for whom, the dialog between reality’s components through the relational experience replaces universal epistemological principle.

This implies subjects, differences, and historical time with its current manifestations. It is a search that insinuates among phenomena, realizing the differences, activating a relation with them, and from time to time obtaining a particular project possibility for the improvement of critical conditions.

The limit is the (only possible) place where the general (theoretical) conditions can be summarized in a specific way. This is because the limit itself is determined by the compared fields’ mutual sense (and measurement); therefore, it is the place where materializing the field of possibilities is possible. Limit and experience thus determine the approach to knowledge: the experience of the boundary, and therefore the understanding of its truth, is that of pursuing it.

The figure of the contemporary city’s limits, lost the linear character of walled enclosures as well as the pre-modern consequential knowledge, conforms in a fragmented structure which, due to the critical depth of our modern project. Reconnecting the pieces in an articulated network layout, through all dimensions, including the fourth, the dynamic of the future, and finally the fifth dimension-: the project depth of memory.

The experiments conducted in those suspended thresholds between incoherent fragments that question the stability of fabrics are an urban experience opportunity. This experimentation process allows for the recognition of spatial, temporal, perceptual, and emotional differences to a logical system of signs and architectural material.

Places stabilized by experience and memory could again manifest the traces of the “civitas” in citizenship, even if in its historically mutating forms: the object of the city’s research is the architectural and ethical idea of accommodation and sociality, even if weak or mutant, but endemically inherent to any urban form.

Reference texts:

Agamben Giorgio, *Paesaggi benjaminiani*, aut aut, 189-190, maggio-agosto 1982

Benjamin Walter, Agamben Giorgio (a cura di), *Parigi, capitale del XIX secolo. Progetti appunti e materiali 1927-1940,* Einaudi Editore, 1986.

Benjamin Walter, Charles Baudelaire, *Tableaux Parisiens. Deutsche Übertragung mit einem Vorwort über die Aufgabe des Übersetzers*. Verlag von Richard Weißbach, Heidelberg 1923

Benjamin Walter, *Immagini di città*, Torino, Einaudi Editore, 2007

Bonomi Aldo, Abruzzese Alberto, *La città infinita*, Mondadori, 2004

Cacciari Massimo, *La città*, Pazzini, 2004

Cacciari Massimo, *Nomadi in prigione*, in: La città infinita (op. cit.)
Chaslin Francois, *Architettura della tabula rasa. Due conversazioni con Rem Koolhaas, ecc*., Mondadori - Electa, 2003

Costa M. Teresa, *Il carattere distruttivo. Walter Benjamin e il pensiero della soglia*, Quodlibet, Macerata, 2008

Dal Co Francesco, *Il progetto come pratica del limite*, Rassegna n. 1, 1979

Deleuze Gilles, *Spazi Nomadi, Figure e forme dell’etica contemporanea*, Millepiani n. 28, 2004

De Michelis Marco (a cura di), *Il sublime è ora*, Skira, Milano, 2008
Gregotti Vittorio, *Recinti*, Rassegna n. 1, 1979

Kant Immanuel, *Critica del giudizio*, trad. Gargiulo A., Laterza, Bari, 1970

Levi Della Torre Stefano, *Zone di turbolenza*, Feltrinelli, 2003
Longino, *Del sublime*, a cura di Donadi F., Rizzoli, Milano, 1991
Mitchell William, *La città dei bits*, Mondadori,1997

Musil Robert, *The Man Without Qualities*, Einaudi, 1957

Nietzsche Friedrich, *Frammenti postumi*, in Idem, Opere, Adelphi, Milano, 1964, vol. VIII, 14

Nietzsche Friedrich, *Così parlò Zarathustra. Un libro per tutti e per nessuno*, Mondadori, 2001

Proust Marcel, *La ricerca del tempo perduto*, De Maria L.; Zazo A. L. (a cura di), Mondadori, 2005

Rella Franco (a cura di), *Critica e storia. Materiali su Benjamin, Cluva*, Venezia, 1980

Rella Franco, *Figure del limite, Il sublime e l’estetico*, in: Il sublime è ora, Skira, Milano, 2008

Rorty Richard, *Conseguenze del pragmatismo*, 1982

Scheerbart Paul, *Architettura di vetro*, Milano, Adelphi, 1982

Scolaro Michela (a cura di), Rolo Banca 1473 *La raccolta d’arte*, Bologna, 1997: *Romolo traccia con l’aratro il confine della città di Roma (particolare)* - Bologna palazzo Magnani

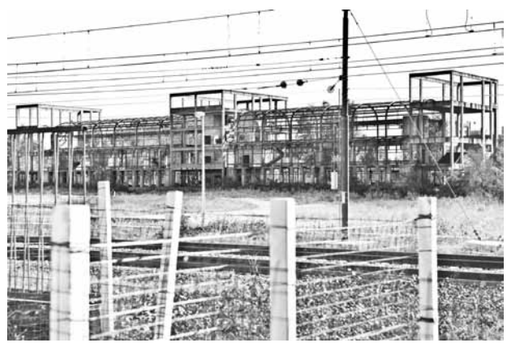
Simmel Georg, *La metropoli e la vita dello spirito, 1900*, Jedlowski Paolo (a cura di), Armando editore, 2004

Simmel Georg, *Saggi sul paesaggio*, Sassatelli Monica (a cura di), Armando editore, 2006

Von Otte Joachim, *Walter Benjamin, Passagen, Kristalle, Die Axt der Vernunft und des Satans liebster Trick*, Corso, Hamburg 2011

Didascalie immagini

01. M. Fiorentino, Corviale, Roma
02 Pantheon, Roma
03 A. Rossi, Terminal S. Cristoforo, Milano
04. Mies Van der Rohe, Neue Nationalgalerie, Berlin



Michele Di Santis-Francesco Lenzini - Xianya Xu
Politecnico di Milano, Italy

Designing in the historic centers: strategies and tactics in the transformation of collective open spaces.

The open spaces intended for public use, from the earliest forms of human association, have ever been considered privileged places in which they express a joint membership in a social system. The shape of these spaces is designed and built by the community through a process (more or less) democratic, in a way corresponding to the social organization and the predominant values that characterize a given historical moment.
Collective spaces are the stage of diverse practices, intimately linked to the identity of the entire community that populates them or the identity of specific groups (ethnic, political, religious, etc.) coexisting within the same society.
The practices of space allow the entire community - or the different groups within it - to add value to the places through a specific use. Although the prevailing social partners have always taken action in order to characterize public spaces in their own image – both in a physical and symbolic sense - different practices have always afforded to others some room for self-determination.
Any process of transformation of space is conditioned by the presence of physical or intangible factors of permanence that represent continuity. This continuity can only involve the physical presence of space and artifacts or conversely involve the symbolic values related to them.
The transformation of a collective space acquires significance through a relationship / comparison with the preexistence, whether it is a physical setting, natural or artificial, or just a shared memory. Both the individual and the collective memory are intimately linked to space and to the elements that characterize it on a morphological level.

The relationship that develops between the material environment and a group membership seems to be so deep as to influence the perception that the group has of itself. The alternation of reference values and prevailing social partners within a community over time is reflected in a stratification of the shapes in the physical body of the city.

The persistence of forms with respect to social, political, cultural and economic processes that have generated them causes a complex coexistence of formal and symbolic values. In historic centers, which generally coincide with the settlements foundation act, these phenomena of overlapping are shown particularly clearly in public open spaces.

Preserving or transforming a public space - taken in its entirety or in some of its basic elements - determines mechanisms of strong psychological impact. Since the early years of second postwar period, the cultural debate in Italy have been addressed with particular attention to the processes of transformation of historic centers public spaces questioning the value of physical and intangible preexistences.

Although this issue has attracted significant moments of discussion at the international level, from an European aspect we don't find a similar impact on a theoretical and practical level. Despite the great interest aroused by the debate, shared methodological intervention coordinate were still not fixed; case study projects of the last twenty years are extremely diverse: mimetic actions of strictly conservative or opposing radical changes of space solutions.

The proposed study analyzes some significant interventions carried out in different historic districts in an attempt to highlight the different attitudes of architects towards pre-existing configurations. The application part of our study is based on a sample of built transformation interventions of public spaces for collective use in historic centers. The research field is limited to projects in Europe over the past twenty years.
Through a comparative analysis of public spaces before and after surgery transformation, the study has focused on reading physical and intangible elements of continuity and discontinuity.

We report three case studies that show three different significant attitudes toward existing configuration: the return to a collective imaginary, metaphorical interpretation, the reinvention of formal values and symbolic space.

- Antonio Gramsci Square, Cinisello Balsamo, Milan (Italy). The town of Cinisello Balsamo, born from the union of two small agricultural settlements founded in medieval time, has been progressively incorporated in the Milan area during the last fifty years. The density and the continuity of the metropolitan development have now determined the substantial inability to recognize a physical margin of Cinisello Balsamo. Since the origins, the square of Cinisello came as a huge space of rectangular shape, where converge the main roads connecting to the surrounding area.

For reasons probably related to the ownership of the funds, the size of the square has always been out of scale with the adjacent built environment. The square has always been the place for the most important collective activities; it went through several transformations over the last century.
Up to 1970 the large space, defined by the margins gradually built, is an elliptical shape bounded by tall trees, already documented by the Theresian Cadastre. This margin identifies two very specific areas: the external driveway space and the interior pedestrian path. This abstract geometric figure, based on the models of the Enlightenment, is not related with the only emerging architecture, the church, standing out against the environment. Similar configurations are very frequent in the redevelopment projects of public spaces in nineteenth-century; they were primarily relied on decorative value of the green.

The second project (1971) attempts to characterize the square through the introduction of a single element: a large green island arranged symmetrically in the space defined by the built environment. Despite the large size and the presence of a small theater inside, this shape is essentially a large traffic island, implicitly emphasizing the relevance gradually assumed by vehicular traffic. Even in this second project there is no significant relationship between the inscribed figure and neighboring environment. In 1999 the Municipality of Cinisello held an international competition for the redevelopment of the square in order to return the space to relevant formal and use values. The French architect Dominique Perrault won the competition and realized it in 2004. The proposal of the designer, which is based on the pedestrianization of the space and the limited traffic management of three of the four tangents roads, identifies different areas each formally and functionally defined.

The first of these redefines the churchyard, by establishing a defined relationship between the church building and public space.
The second is a linear band: a stallage outside the shops.
A large square room, equipped for resting, is the third area, ending the square on the opposite side of the church.
The fourth is an open area being equipped for collective events that also plays a leading role as connecting elements to other parts of the project.

The project essentially redefines the relationship between the built limit and public space, through the connotation of different episodes which bring the enormous space to a more understandable and usable dimension, functionally and psychologically. Perrault's proposal does not take into any account the previous configurations, reinventing the aesthetic and symbolic values of the square, reworking on the archetypal figures derived from the history of urban public spaces.

- Valdo Fusi Square,Torino (Italy). The second project is placed in part of the seventeenth-century urban fabric of Turin, so-called Contrada di Po, in a block originally occupied by the convent of the nuns of the Crucifix. In the nineteenth century the building became the seat of the Royal Museum of Industry and later the Royal Institute of Engineering (later the Polytechnic of Turin). The block, destroyed by bombing in the Second World War, still remains in the following decades an "urban void".
This contrasts with the rebuilding of neighboring lots in the fifties and sixties, as the Stock Exchange by Gabetti & Isola and the Chamber of Commerce by Carlo Mollino. In the sixties the Finnish architect Alvar Aalto makes a planning proposal on the square, which consisted conference center, a hotel and an administrative center maintaining a wide pedestrian area above an underground parking.

The project stops at a preliminary stage and has no further developments. Since the mid-eighties the Administration of Turin involved the area in the plans for historic center mobility. In the early nineties, the Chamber of Commerce promoted a study on the site, in order start up a discussion on its final configuration, launching a series of proposals which, although diverse, are mostly directed to the creation of a large square closely connected with the system of the surrounding green areas. In 1997, the ATM and the City of Turin, following the planning of a multistorey underground car park, announced a national competition to design the square surface as a public space.

Project winner is the design team composed by Francesco Dolza, Massimo Crotti and Piero Felisio. The process of project development was accomplished smoothly: the working plan is completed only four years later, in 2000, recording some changes requested by the Municipality. Due to the lengthening of the construction time, the Administration decided to open the underground car park before the completion of the square (2004); it caused a lot of controversy surrounding the design of the new open space, visible to all while it is still in construction.

The public space is inaugurated in 2005 but still remains criticized by a lot of people. The starting conditions, which the project must be faced with, is working on different levels: first, the presence of large void created by a traumatic event and the memory of this preexistence, a block built in a highly structured system which is the orthogonal grid of expansion of the city between the seventeenth and eighteenth centuries.

Secondly, the particular configuration of topography that reveals considerable height differences between the perimeter roads of the block; finally, the requirements dictated by the Municipality, or the close connection with underground parking and a clear demand to give the design of the green areas a primary role in the articulation of new public space.

The project defines the geometric shape of the surface of the square following the height differences of the four-way perimeter. The square is therefore regarded as a great enclosed space defined by a central horizontal plane, lower than the shares of the roads and surrounded by four polygonal inclined layers which are geometrically connected to the rectangular perimeter of the block. This treatment of "void" - further accentuated by the depression of the central paved area - suggests an interesting interpretation of the origin of this absence, accentuated by the contrast with the strict unity of the urban fabric in which it stands. The metaphor of the void space as a tangible sign of absence is amplified by rising slopes of the two short sides, which establish a comparison with the surrounding buildings, embracing and protecting the central open space.

Although the extrusion of the two sides doesn't reach the top of the surrounding facades, it allows the perception of the three-dimensional consistence of the previous block, hinting to the size of the road that runs along the perimeter of the block.
Regarding the treatment of soil, the designer chooses to answer the request of the public committee to enhance the presence of green spaces, leaving about half the available surface area as a garden. The project of the green area has no naturalistic references, and it is included into the general composition of the square which is geometrical defined strongly.
There are different shrub species organized in stripes of varying width that recall the score of the pavement of the central part of the public space. This ground is treated with a coating of porphyry slabs bordered by curbs in Istrian stone, also used for items of street furniture, actually quite rare. The under-representation of elements of shelter, natural or artificial, leads to greater enjoyment of the square in temperate seasons.

On the long sides, starting from an hypothesis of pedestrianization of the road next to the two complexes of the Stock Exchange and the Chamber of Commerce foreseen the first draft of the project and waned under construction, the processing sequence of the sidewalk-roadway-square turns out to be ambiguous: the design choice fell on a continuum material (paving stone from Istria), which required, however, the use of street furniture to break up the footpaths from those driveways. Inside the square there is a single volumetric element – in which stairs and elevators serving the parking lot below and rooms for public activities are located - set in a central position of the square, which alludes to the archetypal forms of living but it is so minimalist in material treatment (stone, metal grating, wood and glass) to be perceived almost as a metaphysical object, fostering a sense of disorientation and a perception of the place as a void.

- Santo Stefano Square, Bologna (Italy). S. Stefano square is located in the historic center of Bologna, a city founded by Etruscan. Since the medieval time Bologna is one of the most important economic and cultural centers of Italy. The city still has one of the largest and best preserved historical centers in Europe. The current religious complex was an ancient pagan sacred area, then converted to the Christian religion in 430 AD, with the founding of seven churches.

The area outside the perimeter of the Roman city, was defined in its present form during the medieval period. Originally, the wide space in front of the churches was intended for burial area, in the twelfth century it was inscribed in the walls and it is constituted as a trivium surrounded by row houses with porches. Since the beginning of the fourth century terraced properties are gradually merged to form larger court buildings and the perimeter of the square is regularized defining its present form. It remains unchanged until the twentieth century when the fascist regime promotes a project of transformation.

The project of 1934, sponsored by the fascist regime, is part of a series of transformation of the downtown with a twofold purpose: to prepare the city for increasing vehicular traffic, "enhance" the monumental complex of Santo Stefano isolation. The natural slope of the site and the original spatial unit of the square are denied through the creation of two different plans.

The first, higher, matters to the margins of the square and the houses around, the second, lower and in front of the religious complex, is a space subservient to the church.
The difference between the two levels is characterized by different flooring. The decision to place two different levels is rather than upsetting to the relationship between the plaza and arcaded buildings that makes up the outer margin.
The relationship of continuity between the porch, a filter between the public and private space, and the square is lost.
The intervention on the area of the church is consistent with the trend, common in the 30's, to isolate and monumentalize government buildings or ones artistically relevant. Thus it is possible to read the immediately preceding demolition of the building aside the religious complex on the square.

In 1990 the architect Luigi Caccia Dominioni was commissioned by the Municipality of Bologna to draft a proposal for redevelopment of the square. The driving force for the transformation project is Dino Gavina, an influential businessman considered one of the pioneers of industrial design, who submitted the issue to the designer, supporting him politically to the Administration.
The project proposal was based primarily on the recovery of the spatial unit square, denied by the intervention of 1934, redefining the entire space section. Through slightly curved sections fit the natural slope, the designer redefines the relationship between the built edge and the open space.

The floor is reconnected to the arcades around the square; it redesign the continuity between the private, public and semi-public. The project is based on the free use of the entire space favored by the removal of vehicular traffic. The project identifies different areas within the square, but without jeopardizing the newfound space unit: they are in fact defined by the change of the stone pavement.

The courtyard of the church and the main routes crossing the space are defined by geometrical pavement shapes inside the pebbles paving the square. The religious complex of S. Stephen is placed as the background perspective of the internal square: the geometrical shapes identified by the different stone materials, contributing to this result.

Michele Di Santis-Francesco Lenzini - Xianya Xu
Politecnico di Milano, Italyly

The theme of memory is crucial in the development of the project at different scales: the proposal is aimed, on one hand, to the recovery of the space as recorded in the collective imagination through memory and other illustrative material.
The use of pebbles hints to prior conditions of the project area in 1934, alluding to the medieval period when some scholars speculate that it had paved the whole square.
On other hand, the transformation project removes the ideological and physical traces impressed to the city by the fascist regime.

Legenda of attached images

disantis_michele_lenzini_francesco_xu_xianya01.jpg
Piazza Gramsci, Cinisello Balsamo. Schemes of the three different configurations of the square since mid-18th Century.

disantis_michele_lenzini_francesco_xu_xianya02.jpg
Piazza Valdo Fusi, Turin. Scheme showing the layout of the most recent project with its main sections.

disantis_michele_lenzini_francesco_xu_xianya03.jpg
Comparison schemes between the previous configuration (Fascist period) and the project by Caccia Dominioni

General Bibliography

Augé M., *Non luoghi*, Eleuthera, Milano, 2010.

Aymonino, C., *Lo studio dei fenomeni urbani*, Officina Edizioni, Roma, 1977.

Boriani M., a cura di, *Recupero e trasformazione del costruito*, Clup, Milano,1981.

Caniggia G., *Strutture dello spazio antropico - Studi e note*, Uniedit, Firenze, 1976.

Ceccarelli P., Indovina F., *Risanamento e speculazione nei centri storici*, Franco Angeli, Milano, 1974.

Cervellati P. L., *L'arte di curare la città*, Il Mulino, Bologna, 2000.

De Certeau M., *L'invenzione del quotidiano*, Edizioni Lavoro, Roma, 2001.

Hawlbachs M., *La memoria collettiva*, Unicopli, Milano, 1987.

Lynch K., *L'immagine della città*, a cura di P. Ceccarelli, Marsilio, Padova, 1964.

Moneo R., *Costruire nel Costruito*, Allemandi, Torino, 2007.

Norberg-Schulz C., *Genius Loci*, Electa, Milano, 1979.

Remotti F., *L'ossessione identitaria*, Laterza, Roma-Bari, 2010.

Romano M., *Costruire le città*, Skira, Milano, 2004.

Rossi A., *L'architettura della città*, Marsilio, Padova, 1966.

Case Studies Bibliography

AA.VV. *Il Concorso per la Piazza Valdo Fusi a Torino*, Catalogo della mostra, ATM Torino, Torino, 1999.

AA.VV., *Ordenación de la Piazza Gramsci* in «El Croquis 104, 2001/I [*Dominique Perrault. 1990-2001. The violence of neutral/ La violencia de lo neutro*]», Madrid, 2001, pp. 204-207.

AA.VV., «Domus», n. 821, Editoriale Domus, Rozzano, 1999.

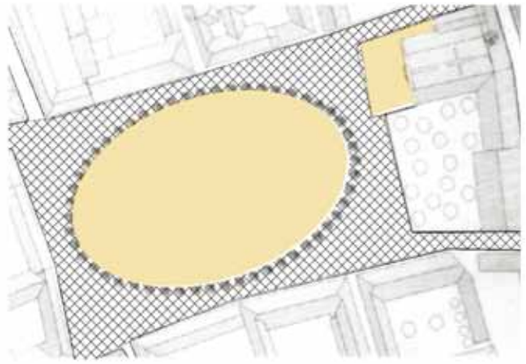
AA.VV., «L'architettura – cronache e storia, ottobre-novembre-dicembre» anno LI, n. 600-1-2, Mancosu Editore, Roma, 2005.

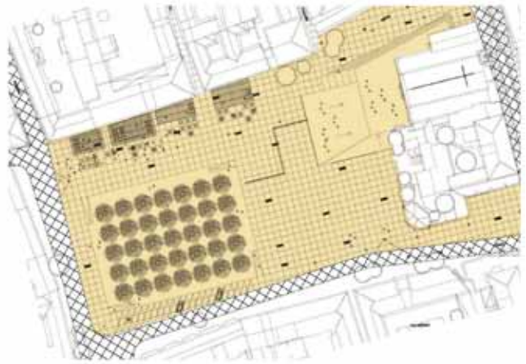
De Rossi A., Durbiano G., a cura di, *Torino 1980/2001. La trasformazione e le sue immagini*. Umberto Allemandi & C., Torino, 2006.

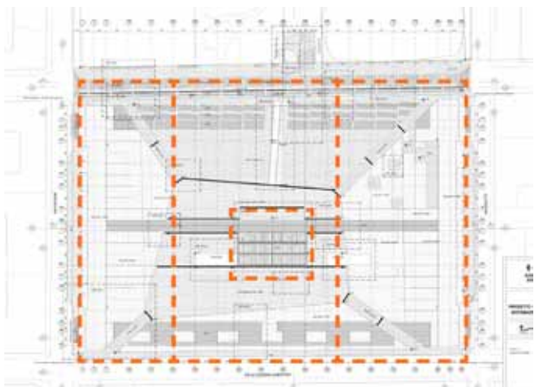
Caccia Dominioni L., Vincenti D., *Origine del progetto*, in Aoberto Scannavini, a cura di, *Piazze e mercati nell'antico centro di Bologna. Storia e urbanistica della città dall'età romana al medioevo, dal Rinascimento ai giorni nostri*, Grafis, Bologna, 1993.

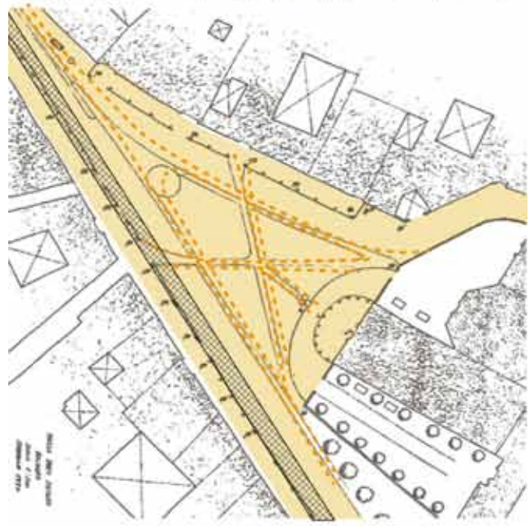
Rivalta L., Caccia Dominioni L., *Recupero di piazza Santo Stefano a Bologna*, in «Domus», n. 742, 1992.

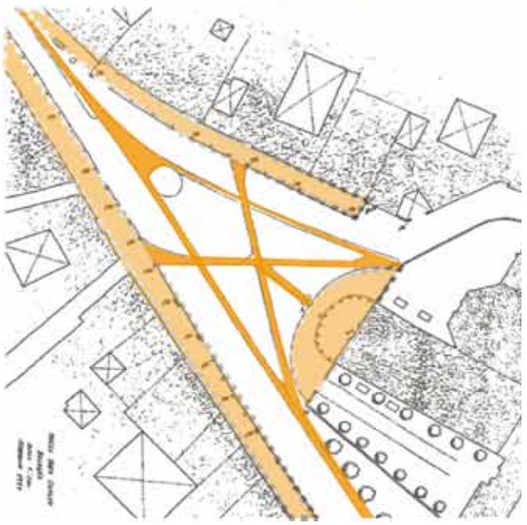
Scannavini R., *La piazza S.Stefano. Da trebbo medievale a piazza prospettica rinascimentale*, Grafis, Bologna, 1991.











Leila Marie Farah
Ryerson University, Canada

Methodological insights from the historical study of food flows in New World settlements.

In examining the transformation of cities throughout history, scholarly attention turns to factors like urban fabrics, infrastructure, military structures, monuments and vernacular architecture. No less important than the above for the life, evolution and death of cities is human subsistence and food supply. The historical works on the provisioning of cities generally either focus on a particular food item and track it from field to table, or, break down the urban supply into a number of food chains that are then examined.[1] Often overlooked, however, are the physical effects that the provisioning of cities and material flows have had in shaping these towns and urban centers, an aspect worth investigating in examining urban transformation.

This paper explores the relationships that linked subsistence to architecture and landscape. It hypothesizes that material flows animate static structures and illustrate the often unexpected links between people, buildings, and their usages. To explore this proposition, it focuses on a case from the New World, the early stages of the French establishment in Montreal, Canada. More specifically, it investigates the material flow of cereals –the most common foodstuff consumed by colonists.[2] The correlation between cereal trajectories, the form of the settlement and its social structure are discussed through an investigation of areas dedicated to the production of cereals, their processing, trade and storage; and a reconstruction of the spatial chains through which cereals made their way from field to table in seventeenth and eighteenth century New France. The present work was initially inspired by surveys on material flows and urban metabolism;[3] however, it directs its focus less onto quantitative data than onto qualitative features of the landscape in transformation and the layout of the settlement. Its main aim is to identify and connect spaces through which cereals transited. Hence, this research pieces together evidence on edible products and reconstructs fragments of food trajectories and their relationship to physical and social space. Towards this goal, it explores the route of cereals and investigates their respective interactions with the built environment as well as their influence on the landscape.

Methodology
In selecting a case for this study, a geographical and temporal setting like the settlement of Montreal in New France presents an opportunity to study how aspiring inhabitants sought to apply their knowledge, culture and utopian ideas to a “new”, vast, less densely-populated territory (compared to their point of origin in the Old World).
Still, the scarcity of the relevant physical evidence from that period, the fact that the interaction between perishable food flows and architecture deals with several unknowns related to the timeframe, as well as the very nature of the material posed major challenges. In addition, records produced by architects were nonexistent. Hence, for the purposes of this research, identifying dispersed and diverse data was a first step in the methodology followed. In seventeenth and eighteenth century New France, official correspondence kept the metropolis informed of the undertakings and challenges faced by its colonies and, as a result, have been thoroughly used by historians as a source of interpretation of the past. In addition, legal documents also provide data on a variety of issues that pertain to the settlement, in general, or to private estates, in particular and include the Custom of Paris, ordinances, edits, mandates and regulations help reveal a number of challenges faced by the colony. More specifically, they show how authorities attempted to regulate the daily life of settlers and indigenous people, to maintain a certain order in settlements and to help protect and reduce health and fire hazards. Besides the measures imposed by authorities, another valuable source comes from notaries’ records. Notaries also produced another set of legal documents to set contractual business partnerships, agreements between tenants and renters, and legal contracts within and between families. Key documents in this category include building contracts, especially masonry and carpentry deals; farm and mill leases and post-mortem inventories. Travellers’ notes are also useful because they describe a given environment. Another significant source of information comes in graphic forms. Extensive iconographical records depict the island of Montreal and the settlement during the French period. Geographers, explorers and engineers surveyed New France and compiled data in the form of maps to mark and set references to the explored territory, as well as report these discoveries to the authorities back in France.
For the purpose of this study, the above primary sources were examined. In conjunction with the reconstructions of maps posted on the Adhémar database, they helped identify a number of parcels of interest in seventeenth and eighteenth century Montreal. The next step of the research involved reconstructing and describing the process or phases through which cereal flows transited. Part of this research stage included locating the structures and infrastructures related to the supply of the settlement of Montreal in cereals. Combined, they were able to synthesize a comprehensive picture of cereal flows, related structures and activities, helping identify their interrelation vis-a-vis the town in evolution.

Settlement of Montreal in New France and cereals
One of the distinctive features of French experience in the New World, especially in Canada, was the seigneurial system.[4] In Montreal, it was inaugurated in 1663, when the Sulpicians began to manage the island on which colonists had already settled since 1642. Initially, the French settled along the Saint Lawrence River in ranges composed of concessions that were perpendicular to the waterway. Once the first range was allocated, a second one was opened, and so on and so forth. Houses were usually built at one end, close to the waterway, leaving ample areas to clear and cultivate land. The structure of the land division and the access to watercourses facilitated the transportation of cereals, enabling the supply of settlements, forts and outposts.[5]

Cereal producers were concentrated in the vicinity of Quebec and Montreal, the two main towns of New France.[6] While the natural hydraulic network helped move people and goods, transportation still required the construction of wood vessels, which evidently affected the biotic sphere. Rudimentary vehicles were usually crafted by the residents; more elaborate ones required the skills of artisans, often employed in shipyards. In terms of the productivity of the land, in 1739, on the island of Montreal, the median cereal production was superior to their subsistence needs and due fees and enabled them to engage in commerce.[7] In sum, colonists imported to the New World their dietary habits which had repercussions on the layout of the landscape they settled in and its ecology.

Beyond farmers’ subsistence needs, cereals were an integral part of the seigneurial system implemented in Canada, where the toll was due yearly.[8] In addition, there also existed a parochial allowance and to compensate the costly construction of mills as well as the miller’s labour, residents were required to grind their grains in the facility built in the seigneury they inhabited and to pay the milling fee, an in-kind contribution for its use.

Processing cereals
To illustrate the variety of paths that cereals underwent, the diagram depicts linkages between their flows and processes associated with milling, baking and brewing. Besides constituting a central aspect of colonists’ dietary daily intake, cereals were also considered as medicinal, parts were transformed into artefacts (brews and mattresses were made of such raw material), and they were used for forage.

In Canada, the French mainly built wind and hydraulic powered gristmills. Windmills were generally placed on heights, or on headlands, and watermills were obviously located along waterways. In principle, they were either built close to settlements or to forts: their proximity to the population helped reduce transport costs and, in the early stages of the colony, they occasionally served as a refuge and protected residents during periods of conflict, because their masonry structure was more resistant than the common pioneer wood shelter. According to Objois, the most frequent windmill typology was the tower mill; its cylindrical masonry tower was typically composed of two to three levels and was covered with a wooden rotating cap.[9] Schematically, removable linen sail cloths attached to wooden sails harnessed the wind and, in turn, activated the gears, hence transforming the horizontal power onto the vertical axis.[10] Openings helped ventilate the building in which the temperature rose due to the heat its “mechanism” generated.[11] Mills did not exclusively rely on wind; a number of them harnessed water power. Water was poured in the wheel and turned due to effect of gravity; this rotational movement was transferred onto the gears and powered the gyratory movement of the grindstone, millers transferred wheat into the feed hopper; the grains were crushed by the rotating effect of the dynamic millstone over the static one, hence, producing flour. An interesting case aiming to enhance the continuity and regularity of water flow is the seventeenth century project for the Lachine Canal which required the construction of substantial manmade infrastructure. Overall, mills were important ‘landmarks’ and their form and location were directly influenced by the source of energy they harnessed. To have one’s grains grinded, accessibility to the mill by land or by water was fundamental; therefore mills necessitated the construction and maintenance of accessible paths. Moreover, mills also served a number of other purposes, for example, they generally housed the miller and his potential family; they were also used as storage space for the seigneurs who either kept or had a portion of their in-kind fees sold onsite.[12] Besides, since the grinding process required time, mills and potential nearby taverns were places of socialization.[13] Furthermore, due to their resistant construction materials, in times of war, they also sheltered the population.

Additional steps in the transformation process of flour included the preparation of the dough and more importantly, baking which took place in ovens. These were enclosed spaces, resistant to high temperatures; and combined dry heat with an indirect exposure to flames. Bakers and tavern keepers baked and sold bread, but as the settlement became more ordered, in 1676, authorities began to limit its commerce to the former.[14] Bread was also produced at home, in religious institutions and in King’s bakeries. In settlements, domestic indoor ovens were typically built by masons; details on their erection, such as their volume and their location, are occasionally specified in notaries’ construction deals.

Other examples are brought to us graphically on a 1704 basement plan of the Château Ramezay and on a 1740 ground floor plan of the Hôtel de Vaudreuil, two private wealthy mansions. Bread was also baked in religious institutions and fed their residents. In the Saint-Sulpice Seminary, a bakery and an indoor earth oven were planned and flour was kept above this space (possibly to take advantage of its constant relative dryness). The 1695 plan for the reconstruction of the Montreal Hôtel-Dieu depicts another interior oven[15] as well as an exterior one located in the courtyard of the poor, probably to reduce risks of overheat and potential fire hazards. In 1755, the King’s storekeeper developed a proposal for the refurbishment of the ancient guardhouse into the King’s bakery. This site was centrally located, between the marketplace and the Port gate.
The drawing depicts two circular areas representing the ovens incorporated to a masonry extension which encroached on the marketplace. In sum, baking took place both indoors and outdoors in bakeries, taverns, religious institutions and wealthy domestic spaces. Authorities intervened and regulated the commerce of bread and cereals, particularly wheat.

During the French regime, authorities and individuals quenched the population’s thirst with a locally produced liquor. In Montreal, the Frères Charon community set up a brewery on their plot and a horse-powered mill facilitated the grinding of barley. Beer contributed to the subsistence of the poor and when sold, generated income.[16] Other smaller scale Montreal-based projects integrated breweries to existing households. However, despite these efforts, beer production remained limited and were far from eliminating the imports of wines and other liquors.[17] Brewing necessitated the grinding of grains, a source of heat, fermentation containers and storage, which required spatial arrangements that masons took into consideration when building or integrating such a facility.

Spaces for trading cereals
Another step in the trajectory of cereals was their trade. In Montreal, initially, the marketplace was a temporary installation and competed, not without tension, with other activities in a multifunctional space[18] (it also served as an area for military training and a site of public punishment and execution of criminals). Nonetheless, during market days, this space was transformed into a commercial pole for food[19] and other goods. In the settlement of Montreal, the market was strategically located in front of the Seigneur’s residence,[20] and adjacent to the main commercial street (Saint-Paul). While undoubtedly important, yet, for cereals, the market was not the only commercial space for cereals, as bakers and merchants were also active in its trade. Moreover, habitants were permitted to obtain supplies directly from farmers. And, despite regulations against it, some related traffic was conducted directly by canoe, thereby adding a mobile cereal-related commercial component.[21] As multifaceted as the commerce of eatable grains seemed, still, it was by no means limited to human diets. From 1706 onward, animal forage (including oats and barley), was also available at the parish square.
Spaces of storage and cereals
Given the exacting weather conditions in Lower Canada, a pivotal component of the cereal paths was that of storage. Cereals were vulnerable to humidity because moisture was a rotting agent; as a result, to protect the harvest, the French sought dryness and ventilation, hence, they typically stored the staple in attics, or in an elevated part of barns or warehouses. To supply the local and neighbouring troops, Kings’ storehouses accumulated edible goods including cereals.[22] In Montreal, archaeological evidence point to a historical storehouse built contiguous to the marketplace. Its South-West façade adjoined the port gate facilitating its supply and access. When there was a lack of storage space, additional areas were leased: in early seventeenth century, there were four, and by 1740, this number increased to no less than six thus, adding to the number of buildings in the settlement impacted by the flows of cereals.[23] In sum, cereals were usually stored in dry and sheltered spaces on individuals’ properties in facilities such as mills or storehouses and in-kind payments were delivered to the parish and the seigneur. Storehouses’ locations were selected for their accessibility and were generally found close to gates from which they could be supplied or could provision forts and outposts.[24] These buildings were not necessarily reserved to store cereals; on the contrary, they could combine different functions. But storing hay was perilous in settlements because of fire hazards; therefore regulations were issued to prevent it.

Places of worship and cereal flows
In New France, religious institutions played a central role and punctuated the lives of habitants from their cradle until their death beds. In Montreal, the Sulpicians baptized the newborns, and celebrated their first communion when children reached the age of twelve. Following this ceremony, and for the rest of their lives, Catholics were required to attend High-Mass regularly and to continue to take communion (a sacramental cereal-based bread); and ultimately, when death threatened their lives, they received the viaticum. To officiate and observe such sacraments, a wood chapel was inaugurated in 1659 at the St. Joseph-Hospital, serving as the settlement’s parish for twenty-four years.[25] The construction of the new church of Notre-Dame started in 1672, but the stone edifice was not inaugurated until 1683.[26] Besides this church, Montreal had nine rural parishes. The mass bread was received in all these places of Roman Catholic worship highlighting another important, if symbolic, use of cereal products. In Montreal, the church was positioned at the heart of the settlement (at the junction between the upper and the lower city) and its symbolic architecture underlined the prominence of the religious presence.

Conclusion
This study has demonstrated that, in terms of nourishment, cereals were an essential ingredient to the survival of the settlement of Montreal. They fed the poor, the rich, the healthy, the ill, urban dwellers, farmers, soldiers and travellers alike. Besides, cereals also nourished domesticated animals, from poultry to draught animals and subsistence livestock, which in turn also produced proteins for human diets. Cereals’ production, trade, transport, transformation processes, storage and consumption (secular and sacred) were inextricably intertwined with settlers’ daily lives. They were commonly found in spaces both at the private domestic (attic, barn, oven, and table) and at public levels, such as the religious (church), the supply (public market or bakery) or services (mill or the tavern) domains.

Additionally, cereals helped foster social contact: producers likely interacted while waiting for their grains to be crushed at the mill; residents quite possibility conversed at the bakery while purchasing bread or flour; members of a parish likely socialized on the church square after receiving the communion during the High-Mass; and male habitants got together and warmed up in taverns and inns (where beer may well have been served). These places became points of social life that tightened community links among colonists. Nevertheless, it also segregated the population, for example, Protestants and other religious minorities did not at-

Leila Marie Farah
Ryerson University, Canada

This research reveals that, identifying significant spaces according to their role in the food supply is an important step in illustrating the links between food flows, architecture and settlement pattern. They also highlight the creation of social bonds, commercial practices and economic activities as well as synergies between space characteristics and a certain degree of self-sufficiency of the settlement, enabling the subsistence of inhabitants and facilitating the transformation and preservation of food items. More generally, as postulated in the beginning of the paper, this research demonstrates that material flows and processes not only necessitate specific buildings, spaces and the links between them, but also, helps create a network of movement, activity and interaction particular to the city. In other words, food flows ties infrastructures and people together, generating a momentum that adds to a settlement's pattern, or a city's layout as well as social and cultural transformation.

Bibliography

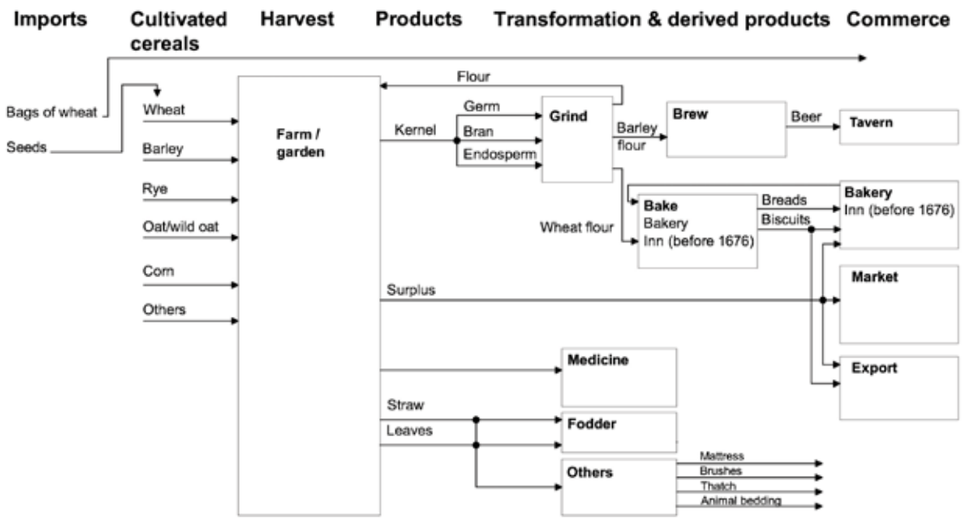
Barles S., *Feeding the city: Food consumption and flow of nitrogen*, Paris, 1801–1914, in "Science of The Total Environment," vol 375, Iss 1–3, 2007, 48-58.
Bélanger D., Rozon L., *Les religieuses au Québec*, Libre expression, Montréal, 1982.
Beutler C., *Le rôle du blé à Montréal sous le régime seigneurial*, in "Revue d'histoire de l'Amérique française," vol. 36, no. 2, 1982.
Briand Y. "Auberges et cabarets de Montréal (1680-1759): lieux de sociabilité," Thesis, Laval, 1999.
Canadian Centre for Architecture. "Adhémar database." http://www.cca.qc.ca/Adhemar/.
Charbonneau M., Lafrance M., Poirier M., Montréal: Entrepôt and Military Logistic Centre, In Lambert Ph., Stewart A. M., *Opening the gates of eighteenth-century Montréal*. Montréal, Canadian Centre for Architecture = Centre canadien d'architecture, Montreal, 1992.
Dechêne L., *Le partage des subsistances au Canada sous le régime français*, Boréal, Montréal, 1994.
Habitants et marchands de Montréal au XVIIe siècle, Boréal, Montréal, 1988 [1974].
Dépatie S., "L'évolution d'une société rurale: l'île Jésus au XVIIIe siècle." Thesis, McGill University, Montréal, 1988.
Deschênes G., *Quand le vent faisait tourner les moulins. Trois siecles de meunerie banale et marchande au Québec*, Septentrion, Québec, 2009.
Fauteux J. N., *Essai sur l'industrie au Canada sous le régime français*, imprimé par Ls-A. Proulx, Québec, 1927.
Ferland C., *Bacchus en Canada: boissons, buveurs, et ivresses* en Nouvelle-France, Septentrion, Québec, 2010.
Franquet L., *Voyages et mémoires sur le Canada [1752-1753]*, Edited by Institut canadien de Québec, Éditions Élysée, Montréal, 1974.
Guillerme A,. *The age of water: the urban environment in the North of France, A.D. 300-1800, Environmental history series, no. 9*, Texas A&M University Press, College Station, 1988.
Harris R. C., *The seigneurial system in early Canada; a geographical study*, University of Wisconsin Press, Madison, 1966.
Lachance A., *Vivre à la ville en Nouvelle-France*, Libre expression, Outremont, Québec, 2004.
Lahaise R., *Les édifices conventuels du Vieux Montréal: aspects ethno-historiques*, Hurtubise HMH, LaSalle, Québec, 1980.
Laperle D., *Le grain, la meule et les vents*, Les éditions Gid, Québec, 2003.
Massicotte É.-Z., *Montréal sous le Régime Français: répertoire des arrêts, édits, mandements, ordonnances et Règlements: conservés dans les archives du Palais de justice de Montréal 1640-1760*, G. Ducharme, Montréal, 1919.
Objois, C., "Les meuniers dans la seigneurie de l'île de Montréal au XVIIIe siècle," Thesis, Université de Montréal, Montréal, 1981.
Pothier L., Duguay F., *Le domaine agricole d'un marchand aux XVIIe et XVIIIe siècles: le Site LeBer à l'île des Sœurs*, Gouvernement du Québec, Ministère de la culture, Québec, 1993.
Rousseau F., *L'œuvre de chère en Nouvelle-France: le régime des malades à l'Hôtel-Dieu de Québec*, Presses de l'Université Laval, Québec, 1983.
Trudel M., *Les débuts du régime seigneurial au Canada*, Collection Fleur de lys, Fides, Montréal, 1974.

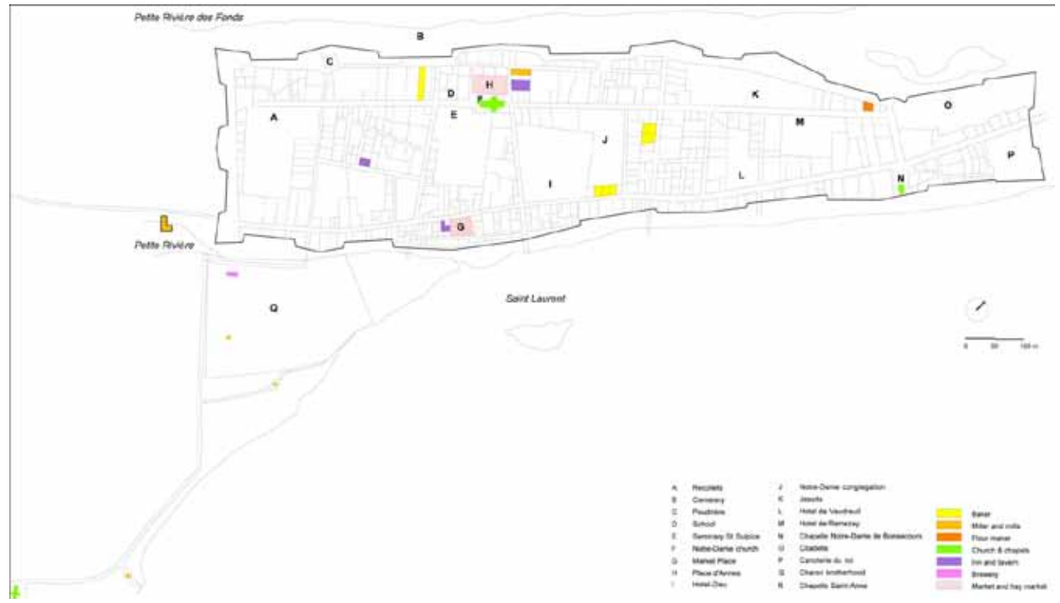
Legenda

Figure 1. Cereal network. Schematic diagram of a variety of cereal paths (both imported and cultivated locally). Source : Farah, L. M.
Figure 2. A view in plan of the cereal related activities in the settlement of Montreal around 1725.
Source: drawing based on a plan and data collection from the Adhémar database, an online resource on the history of Montreal available at the Canadian Centre for Architecture, in Montreal, Canada.

Notes

[1] Steven L Kaplan, Provisioning Paris: merchants and millers in the grain and flour trade during the eighteenth century (Ithaca: Cornell University Press, 1984).George Dodd, The food of London: a sketch of the chief varieties, sources of supply, probable quantities, modes of arrival, processes of manufacture, suspected adulteration, and machinery of distribution, of the food for a community of two millions and a half (London: Longman, Brown, Green, and Longmans, 1856); Roger Scola, Feeding the Victorian city : the food supply of Manchester, 1770-1870 (Manchester: Manchester University Press, 1992); Reynald Abad, Le grand marché: l'approvisionnement alimentaire de Paris sous l'ancien régime (Paris: Fayard, 2002).
[2] Prior to French colonists' arrival, the indigenous Iroquois had cultivated a number of crops including corn.
[3] See Barles and Guillerme's publications
[4] Trudel M., Les débuts du régime seigneurial au Canada, Collection Fleur de lys, Fides, Montréal, 1974.
[5] Dechêne L., Habitants et marchands de Montréal au XVIIe siècle, Boréal, Montréal, 1988 [1974]: 128.
[6] Harris R. C., The seigneurial system in early Canada; a geographical study, University of Wisconsin Press, Madison, 1966.
[7] Dechêne, Op. Cit., 325. Dépatie S., "L'évolution d'une société rurale: l'île Jésus au XVIIIe siècle." Thesis, McGill University, Montréal, 1988: 258-260.
[8] Ibid., 151.
[9] Objois, C., "Les meuniers dans la seigneurie de l'île de Montréal au XVIIIe siècle," Thesis, Université de Montréal, Montréal, 1981, 23.
[10] Deschênes G., Quand le vent faisait tourner les moulins. Trois siècles de meunerie banale et marchande au Québec, Septentrion, Québec, 2009.
[11] Laperle D., Le grain, la meule et les vents, Les éditions Gid, Québec, 2003 : 48
[12] Beutler C., Le rôle du blé à Montréal sous le régime seigneurial, in « Revue d'histoire de l'Amérique française », v. 36, no. 2,1982: 253
[13] Franquet L. Voyages et mémoires sur le Canada [1752-1753], Edited by Institut canadien de Québec, Éditions Élysée, Montréal, 1974: 24
[14] Massicotte É.-Z., Montréal sous le Régime Français: répertoire des arrêts, édits, mandements, ordonnances et Règlements: conservés dans les archives du Palais de justice de Montréal 40-1760, G. Ducharme, Montréal, 1919: 16-20.
[15] This plan was designed by Gédéon de Catalogne. Published in Lahaise R., Les édifices conventuels du Vieux Montréal: aspects ethno-historiques, Hurtubise HMH, LaSalle, Québec, 1980.
[16] Bélanger D., Rozon L., Les religieuses au Québec, Libre expression, Montréal, 1982: 72.
[17] Ferland C., Bacchus en Canada: boissons, buveurs, et ivresses en Nouvelle-France, Septentrion, Québec, 2010.
[18] Lachance A., Vivre à la ville en Nouvelle-France, Libre expression, Outremont, Québec, 2004.
[19] Massicotte, Op. Cit:112.
[20] Pothier L., Duguay F., Le domaine agricole d'un marchand aux XVIIe et XVIIIe siècles: le Site LeBer à l'île des Sœurs, Gouvernement du Québec, Ministère de la culture, Québec, 1993.
[21] Massicotte, Op. Cit., 132.
[22] They supplied the South, the South-West and the North West of Montreal. Charbonneau et al., Montréal: Entrepôt and Military Logistic Centre, In Lambert et al., Opening the gates of eighteenth-century Montréal. Montréal: Canadian Centre for Architecture, 1992: 31-32
[23] Dechêne, Le partage des subsistances au Canada sous le régime français, Boréal, Montréal, 1994, 124.
[24] Charbonneau et al., Op. Cit.
[25] Lahaise, Op. Cit.: 39.
[26] Ibid.
[27] Briand Y. "Auberges et cabarets de Montréal (1680-1759): lieux de sociabilité," Thesis, Laval, 1999: 43-44
[28]Massicotte,Op. Cit.: 73.





Federico Ferrari
Lab'Urba - Institut d'Urbanisme de Paris,
Université Paris Est-Crèteil

The antimodernist polemic as rhetorical construct: Prince Charles and "populist realism"

In the autumn of 1988, during a peak viewing time, the BBC broadcasted *A Personal View of Architecture*, whose opening credits, superimposed over images of English countryside and villages and accompanied by the music of Händel, indicate that it was «written and conceived by His Royal Highness the Prince of Wales»[1]. For many years the Prince of Wales has waged a very public battle against "modernist"[2] architecture[3]; the television production shows the highest degree of Prince Charles' rhetorical maneuvering.

Not by chance, the beginning of the documentary concentrates on the failures of subsidized publichousing in the post War era and makes its case by showing some paradigmatic examples. It then moves on, after picking out some "positive" quintessentially British examples of modest stone and slate houses of a small town in the north of England, to ambitiously elaborate a critique of urban areas in general. The Prince uses the urban center of Birmingham as a negative example, pointing out how the city is "strangled" by motorways in an aereal photograph, to then show a local library where it would be moreappropriate to burn books rather than read them. The viewer is then shuttled to a decayed, lower class neighborhood in East London to elucidate itsfunctional deficiencies of services there through the inspection of all the typical drawbacks found in one of the area's many apartments. The Prince solicits the neighborhood's residents to voice their complaints about their life there. The conditions exposed become symbolic of the «sad heritage of public housing in the 1960s». In one shot the viewers are shown Charles controlling heavy demolition equipment as he attempts to tear down a reinforced concrete slab characteristic of postwar public housing. After an image of the English countryside disfigured by modern housing, the viewer's attention is inevitably focused on London, a city that exemplifies how the city's built environment in decayintermixes with urban fragments that still retain an authentic English architecture. As he boats along the river Thames, the Prince deplores the harm done to the city's skyline, comparing it to that of 17th and 18th century London; he suggests that it would be impossible for a modern-day Wordswith to «write Romantic verses about the panorama that one takes in from Westminster bridge»[4].

The Prince presses on to visit the neighborhood symbolizing London of the 1980s, the industrial Docklands, criticizing the fact that the rehabilitation of the historic area was not modeled on the old dock buildings. He pushes on then to the "wolf's lair", the office of the entrepreneurs of Canary Wharf and interviews Cesar Pelli, who in those years oversaw a large part of the redevelopment project. There, in the company of the architects, Charles observes a model of the office towers that were to be built andcomplains about their excessive height of 250 meters. He wonders aloud whether they must really mimic the New York style of skyscraper tradition that he finds so alien to London. The regret for an urban plan compromised by contemporary architecture becomes a theme, the «chaotic free for all of skyscrapers»[5] making him miss the picturesque London dotted by Christopher Wren church spires. The Prince goes on to make a number of rather coarse but effective comparisons, as he characterizes the interior spaces of Colin St. John's new British Library as more like «an academy for the secret police»[6] than a public library; similarly, he likens James Stirling's redevelopment of the Poultry Street zone to an «old 1930s wireless»[7].

The use of the Prince's non-specialist language has a tremendous media power, what Charles Jencks has defined as «a holy war of words»[8] in his work on the constitution and consequences of the Prince of Wales' public interventions about architecture[9]. Beyond the aforementioned examples of the British Library and the Poultry Street project and the generic accusation that modernism produces buildings that are "glass stumps" or "incinerators", the Prince's slew of "colorful" comments in the show continues, taking as its target another noted public building: Sir Denys Lasdun's National Theater, likened to "a nuclear power station."[10] Charles claims that he tried to like it, but he really could not manage to do so.[11] The next shot in the video focuses on Paternoster Square, previously upbraided by the Prince in infamous lecture at the Mansion House on December 1, 1987[12]. The inheritor to the throne argues the case of the "classicist" project of John Simpson & Partners, deploring the design of the winners of the competition, Studio Arup. This speech represented the culmination of a series of polemics waged by the Prince, the first example of which dates to 30 May 1984, with his speech at the Royal Institute of British Architects[13].

Retracing the by-now long history of the Prince of Wales'interventions in the field of architectural debate demands an appraisal of the effects on the real making of the city[14]. Often, as is the case in London, these statements have had concrete repercussions on the course of projects. The aspect that I want shed light on, however, is another: the conditions and forms of public discourse on architecture. The critical act of deconstructing rhetoric in operation is particularly significant in urban environments where the multiplicity of the actors constitutes an objective problem in the configuring of shared processes[15]. The singularity of the English case is characterized by the presence of a strongly structured public opinion. It is articulated at different levels through an extremely vivid mosaic including, but not limited to, professional associations, citizen-run lobbying groups, industry press. In the context of the Prince of Wales' interventions, a decisive role is played by television. Not coincidentally, Jürgen Habermas, in the celebrated *The Structural Transformation of the Public Sphere*[16], examines the United Kingdom in his analysis of the formation of a distinctly modern public sphere, considering how others countries such as the "Continental variants" are indebted to the English model. Within a context that is characterized by an extremely debilitated state authority, of an urban culture that has in subsidiarity one of its cardinal principles, every attempt of "construction from on high" is seen with suspect. This tendency only became more accentuated and extreme in the Thatcher era, structuring itself in its own true neoliberal ideology. In the architectural field one of the most efficacious rhetorical arms in the hands of anti-modernist polemics would inevitably be the attack on public, "intensive" architecture of the 1950s and 1960s that becomes the principal symbol of the much-hated era of public welfare. Gavin Stamp, one of the most vigorous "revisionist" historians of architecture, summarily states:
«Few [of any modern architects] had any real experience or knowledge of English conditions and, inevitably, no interest in the traditional English concern with harmony and landscape. It is a striking fact that many of the best known MARS Group architects were colonials or foreigners […]. Then there were the Continentals […] it is scarcely surprising to find that many modern architects as well as many intellectuals were Marxist sympathisers[…]. Although 'parlor pinks' may have done little damage in the 1Thirties with their necessarily totalitarian vision, the mischievous association between modern architecture and state socialism was consummated after World War II […]»[17]

It is therefore important to underline how, in the English case, the ideological furor of neoliberals finds a fertileterrain in the architectural debate that can be facilely politicized through mass media outlets: it is in fact thanks to the propagandistic emphasis of the damage sustained by the hallowed "English" landscape and patrimony that the social role of the state can be held up not only as an example of mistaken politics but also as a sacrilege hoisted upon Englishness, a category that Pevsner, with much different intents, had celebrated and which is ably taken advantage of in the 1980s by the so-called Neo-Traditionalist[18]. "Tradition"-come-ideology, will become for those, above all for Robert Stern[19] that which the *Spirit of the Times* was for the so-called historical avant-gardes[20]. Inevitably in view of the recuperation of this "island" tradition, the monarchy could not but help assume a central role, as first and most true interpreter of the soul of the place and, with it, of the feeling-common, through a series of polemicsand rhetoric that is not difficult to recognize as populist.

A thorough examination of Prince Charles' different statements, whose *summa* is undoubtedly his 1989 book *A Vision of Britain. A Personal View ofArchitecture*,[21] is not necessarily worthwhile for their practical applications. In fact it is evident how such polemics have relatively little bearing or concrete effects on the English built environment. The reception of Charles' interventions in the professional and academic worldreveals a fundamental aspect that characterizes much of contemporary architectural debates: the instrumentalizing call to the people, due to its how its semantic ambiguity can manipulated, such that it conforms to a conservative logiceven as it wears the clothes of "progressiveness". This happens to the point that the different defenders of the *status quo* are constantly identified with the so-called Marxists, whose armed wing is the much-maligned *Modern Establishment*[22]. The controversy that the heir to the throne incited through official interventions in public forums and institutions, and in articles in the national and local press, is interesting precisely for the communicative model it exemplifies. I want to track its rhetorical dynamics.

The actual soundness of or expertise displayed in these speeches and the architectural program promoted by the Prince - by figures deemed "safe" such as Leon Krier[23], John Simpson and Quinlan Terry[24]-remain, in my analysis, in the background. Given that it is through the communicative/rhetorical strategies that the populist approach of such attitudes emerges, at this juncture architecture and urban developmentare secondary concerns. One can attempt to define the concept of populism, which is elusive as much as it is pervasive, by focusing solely on the praxis of public discourse: since, in our case, the rhetoric of *common sense* and *ordinary man* forms in that realm. In the wake of traditionalism and the "return to order", so frequent after the crisis of the strong image of "the modern" at the end of the 1960s - the populist degeneration of the discourse carried out in England allows one to see how it exemplifies, in a simplified version that lends itself to instrumentalization via mass media, a trend that has a rather different intellectual pedigree and is rooted in a long tradition[25]. Populism originates in the appropriation and instrumentalization of themes that are born in other contexts.

The way that architecture is instrumentalized and, in a sense, caricatured, as well as the total subordination of issues of design to rhetorical polemics is the real lesson to be learned from examination of the English debates about the built environment that were provoked by the public interventions of the Prince of Wales. On closer inspection, the afore mentioned "Holy War of Words" captures, perhaps unwittingly, something far more important than the mere use of populist terminology - and thus demagogically effective - in the field of discourse that regards architecture and urban planning: it shows us the centrality of rhetorical manipulation of stylistic categories and consequently their inability to function as real and concrete descriptors: from one side, *modernism, functionalism, rationalism* (with its correlates, such as "modern establishment") and from the other *classicism*[26]*, traditionalism, Georgian style*, paired with the prefix neo which situates it in a historical specificity. Of course, this is not a dynamic that is found solely in the English debate nor is it limited to the postmodern era. It is well known that all avantgardes, and with them, "modern" architecture, are animated by a series of functional rhetoric that serves in the creation of a canon. Nonetheless, what interests meis the Manichean dichotomy between two semantic fields: one side we have the conceptuality of cold intellectualism, inhumanity and elitism and the on the other spontaneity, humanity and democratic values. The analysis of the English polemics is an extreme case that lends itself to demonstrate the total marginality of architecture as a three-dimensional, stratified, concrete object. In any case, reduced to an "image", rendered banal and reductive and thus demagogically branded, it carries an enormous importance. A potent evocative instrument, it becomes the ace card of populist rhetoric. The distorted representation of society and in particular of the so-called middle class, object of a "symbolic over-investment[27], finds in the architectural formits nature and in many ways its somewhat obvious realization.

The nostalgic British neo-traditionalism is a paradigmatic case: it respond to an exigency of perceived protection demanded by the middle class. In this sense we can therefore speak of *Populist realism*, as a hypothetical reading of the conspicuous features of the phenomena that characterise the contemporary city.
The oscillation between *traditionalism*, in the attempt to identify a popular and objective rationality secured by history, as a guaranty of vitality, takes place at a crossroads of architectural history and characterises the true theoretical node that the discourse of these years focuses on, and comes to head in the notion of spontaneity: «between the different avenues explored to renew the Modern Movement that of vernacular architecture is both one of the most pondered and most insidious, because of the ambiguities raised by its presumed spontaneity»[28].

The argument offered here is that, according to this optic, it is possible to identify a tendency of contemporary architecture to be a clear populist sign and that its aesthetics can be defined according to the notion of *populist realism*. Further, the category of populism defined here can in its time be considered a useful element to understand the concept of the *postmodern* contributing at least in part to better elucidate this too often vague and indeterminate notion.

The populist rhetoric is an extreme rationalisation that in many accounts is articulated as a distinctive trait of the *postmodern condition*. Fredric Jameson[29], after he articulates the contradictions native to the concept of Modernism[30], affirms, reconsidering them through the insight of Ernst Bloch's concept of the «contemporaneity of the non-contemporaneous»[31], that the most profound nature of the culture of Modernism is the «co-existence of realities originating in totally different moments of history: the handicraft beside billboard, the agricultural earthly with the Krupp industries or the factories of Ford in the background»[32]. Thus *modernism* in architecture, is in reality a transitory moment, with its stockpile of contradictions and co-existence of opposing tendencies. The infinite unfolding of the possibilities offered by mass society, that before was just sketched out, in the 1960s obligated professional culture to take account the exigencies of the people. What emerges is a phenomenon legible as fully and paradigmatically postmodern, inasmuch as «the postmodern must be described as a condition in which what is archaic and residual is swept away. […] It is in this sense that one can affirm that modernism is marked by a situation of incomplete *modernization*, or that postmodernism is *more modern* than the same modernism»[33]. Ulrich Beck, in *Conditio humana*[34], refuses in this sense the notion of the postmodern preferring, not by chance, that of the *more-modern*.

So, the anti-modernism of the forms actually constructed is thus decidedly accidental and ultimately less meaningful. The logic and the rationality of populism is never *anti-modern*, but is instead the most accomplished and coherent expression, indeed the *most modern*. This is also true also when it takes on, as one finds often, an *anti-modernist* formal appearance. This aspect of populism is far from irrational. On the contrary, its inner nature is profoundly rational, since it is nothing other than an automatic adaptation of the system - that is, of the market - whose ultimate objective is the minimisation of the risk. This *populism* is to be understood in this sense as a superior form of rationality, since it manages to fabricate the rhetoric of democratic self-determination in a reassuring image. Just as this kind of architecture produce a *simulacrum of reality*, the populist rhetoric effectively generates a *simulacrum of spontaneity*, a spontaneity that is both repressive and self-replicative. What emerges is an attempt to rationalise the heterogeneous realities of an era in which democratic individualism could open new and infinite - and incontrollable - spaces of liberty: «the emphasis on the performances that have come after the collapse of the grand narratives of modernity have generated, among its effects, a fear of inadequacy. The fear of flattening, of resemblance, of homogenisation. […] With the progressive emergence of many indifferent micro-rationalities that conflict with one another»[35]. The apparatus of populist realism, configures itself as one among the attempts to harmonise the heterogeneous whole of these "micro-rationalities".

Federico Ferrari
Lab'Urba - Institut d'Urbanisme de Paris,
Université Paris Est-Crèteil

[1] Blundell Jones, 1989, pp.70-75.
[2] "Modernist" here has a derogatory connotation that is attributed by its detractors, according to typical demagogical modalities of "populist discourse": a term born in other fields, in itself complex and controversial, that becomes, after being simplified and trivialized, a mere rhetorical instrument which in this case is utilized to identify an enemy. The critique of Modernism depends on a monolithic vision of it. It is evident how 1970s "revisionist" historiography was interested in implementing such a reading. In the need to create a contrasting ideology it was necessary to read Modernism in a very ideological way, without regard for much of the scholarship that had by then completely critiqued the reductiveness of such an understanding. See Pommer, 1980, pp. 353-361. Regarding rhetorical rationales of "populist apparatus", in the field of the endless literature on the subject, see the following two texts: Laclau, 2005; Taguieff, 2002.
[3] For an ample and precise examination of all of Charles' speeches and their relation to the English debate, see Rosso, 2006, pp. 97-106. For English culture and modern architecture see also Rosso, 2001
[4] Blundell Jones, 1989, pp.70-75.
[5] Ibidem.
[6] Ibidem.
[7] Jencks, 1989, pp. 24-29.
[8] Ibidem.
[9] Cfr. Jencks, 1988.
[10] Jencks, 1989, pp. 24-29.
[11] Cited in Blundell Jones, 1989, p.72.
[12] See Paternoster Square. *A Discussion between Leon Krier and Charles Jencks*, 1988.
[13] See Rosso, 2006, pp. 97-106.
[14] Ibidem.
[15] Holyoak, 1993, p. 51.
[16] cfr. Habermas, 1962.
[17] Stamp, 1979. See also Pommer, 1980, pp. 353-361.
[18] See Rosso, 2001, p. 25
[19] Stern, 1969; Stern, 1980, pp. 73-87.
[20] Pommer, 1980, pp. 353-361.
[21] H.R.H. Charles the Prince of Wales, 1989.
[22] Rosso, 2006, p. 102.
[23] Leon Krier is the most important architect that he worked with Prince Charles, for example with the Poundbury's project. See Krier, 1993, pp. 70-81 and Krier, 1995, pp. 132-133.
[24] Quinlan Terry, author of a commercial building in Richmond and John Simpson, author of project for Paternoster Square.
[25] On this subject see Pigafetta, Abbondandolo 1997. In regard to the "anti-modern emergencies", see Sternhell, 2006.
[26] For a rigorous and exhaustive analysis of the concept of Classicism in the English tradition and its instrumental use by Neo-traditionalists of the 1980s, see Collins, 1989, pp. 57-63.
[27] Goux, Maurin, 2012, p. 9.
[28] Belluzzi, 1992, p. 52.
[29] Jameson, 1991. Also important on the same subject is Harvey, 1990.
[30] See also Oechslin, 2008.
[31] Bloch, 1962 , cited in Jameson, 1991, p. 310.
[32] Ibid.
[33] Jameson, 1991, p. 312.
[34] Beck, 2007. The populist rhetoric is in this sense a kind of "management of risk" for a city or a territory that is fruit of the *conditio humana* that, not by chance, Ulrich Beck had already defined in 1986 as a "society of risk". See also Beck, 1986.
[35] Secchi, 2000, p. 23.

Bibliography:

Paternoster Square. A Discussion between Leon Krier and Charles Jencks, in «Architectural Design», n. 1-2, 1988.

U. Beck, *Weltrisikogesellschaft. Auf der Suche nach der verlorenen Sicherheit*, Suhrkamp Verlag, Frankfurt am Main 2007, (ed. it.: Conditio Humana. Il rischio nella società globale, Laterza, Roma-Bari 2009;

U. Beck, *Risikogesellschaft. Auf dem Weg in eine andere Moderne, Suhrkamp*, Frankfurt am Main 1986;

A. Belluzzi, *Venturi Scott Brown e Associati*, Laterza, Roma-Bari 1992;

E. Bloch, Erbschaft dieser Zeit, Suhrkamp, Franfurt Am Main 1962;

P. Blundell Jones, *Il principe azzurro e i modernisti cattivi: una fiaba per l'era televisiva*, in «Spazio e Società», n. 46, April-June 1989;

M. Collins, *Classicism in British Architecture*, in «Architectural Design», n. 5-6, 1989, pp. 57-63;

P. Davey, *Prince's political manifesto*, in «Architectural Review», n. 1110, 1989, pp. 4-10.

D. Goux, E. Maurin, *Les nouvelles classes moyennes*, Seuil, Paris 2012.

H.R.H. Charles the Prince of Wales, *A Vision of Britain*, A. G. Carrick Ltd, London 1989, (ed. it.: *Uno sguardosulla Gran Bretagna. La mia concezione dell'architettura*, Frassinelli, Milano, 1989);

J. Habermas, *The Structural Transformation of the Public Sphere* (ed. or.:Strukturwandel der Oeffentlichkeit, Hermann LuchterlandVerlag, Neuwied 1962);

D. Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*, Blackwell, Oxford 1990;

J. Holyoak, *Why Krier's vision reamins unrealised*, in «Architect's Journal», n. 18, 1993, p. 51.

F. Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism*, Duke University Press, 1991;

C. Jencks, *Ethics and Prince Charles*, in «Architectural Design», n. 5-6, 1989, pp. 24-29;

C. Jencks, *The prince, The Architects and New Wave Monarchy*, Rizzoli, New York 1988;

L. Krier, **Poundbury Masterplan. Dorchester, Dorset, 1988-1991**, in «Architectural design», n. 9-10, 1993, pp. 70-81.

L. Krier, *Architettura. Scelta o fatalità*, Laterza, Roma-Bari 1995, pp. 132-133.

E. Laclau, *On Populist Reason,* Verso, London 2005;

W. Oechslin, *Le radici tedesche dell'architettura moderna. Gli esordi del Werkbund e di Mies*, Allemandi, Torino 2008;

G. Pigafetta, I. Abbondandolo, *Le teorie tradizionaliste nell'architettura contemporanea*, Laterza, Roma-Bari 1997;

R. Pommer, *Some Architectural Ideologies after the Fall,* in «Art Journal», vol. 40, n. 1/2, 1980;

M. Rosso, *La storia utile. Patrimonio e modernità nel lavoro di John Summerson e Nikolaus Pevsner*: Londra 1928-1955, Edizioni di Comunità, Torino 2001;

M. Rosso, **Il principe Carlo e il dibattito pubblico sull'architettura in Inghilterra**, in Francesca B. Filippi, Luca Gibello, Manfredo di Robilant,1970-2000. *Episodi e temi di storia dell'architettura*, Celid, Torino 2006, pp. 97-106;

B. Secchi, *Prima lezione di urbanistica*, Laterza, Roma-Bari 2000;

G. Stamp, *Britain in the Thirties*, in «Architectural Design», n. 10-11, 1979;

R. Stern, *New Directions in American Architecture*, 1969;

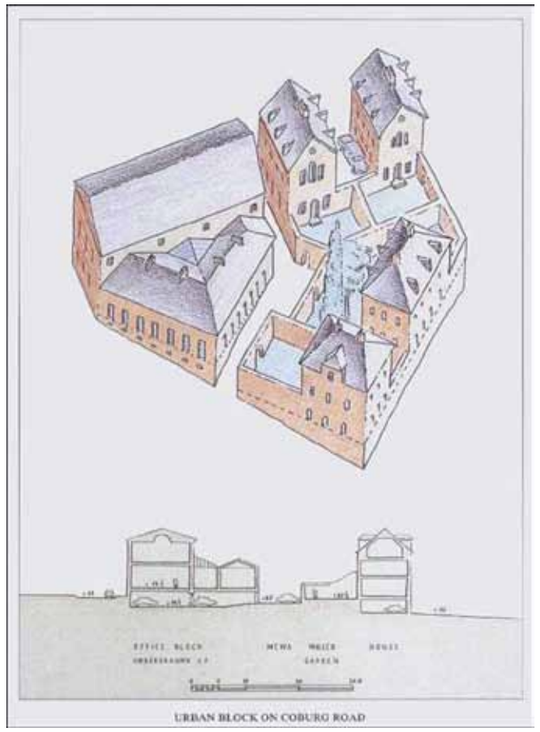
R. Stern, *The Doubles of Post-Modern*, in «Harvard Architecture Review», I, 1980, pp. 73-87;

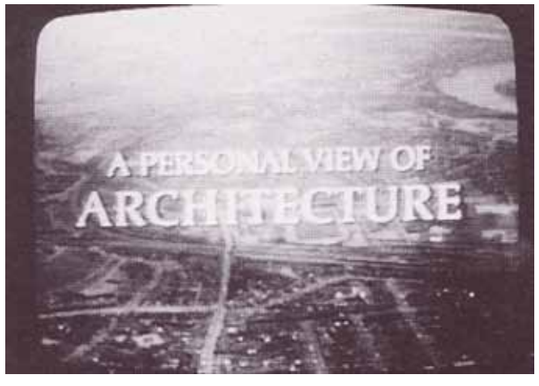
Z. Sternhell, *Les anti-Lumières*, ArthèmeFayard, Paris 2006 ;

P. A. Taguieff, *L'illusion populiste*, Berg International, Paris 2002;

Illustration captions:

Federico_Ferrari_01: the Prince Charles demolishing a typical "modernist architecture", 1987.
Federico_Ferrari_02: the first image of the A Vision of Britain, 1988
Federico_Ferrari_03: Leon Krier, Poundbury's master plan, 1989.
Federico_Ferrari_04: Leon Krier, a typical residential building in Poundury, 1991
Federico_Ferrari_05: John Simpson & Partners, Brownsword Hall, Poundbury.
Federico_Ferrari_06: John Simpson & Partners, Paternoster Square, London, 1987.





Joan Florit Femenias
Universitat Politècnica Catalunya, Spain

Metropolitan Central Park, a singular piece of the open space system: Towards a definition.

Contemporary large metropolitan areas are playing an increasingly important role in the urban world nowadays. Large cities are more than just a larger version of smaller cities. What makes them different is not only a quantitative issue (land occupied, resident population or capital accumulated). They also stand out due to the characterization of their qualities and ever more specific composition. That is, some urban values, qualities or utilities are only offered by large metropolitan areas.

In defining the differences between both realities, the system of open or unoccupied spaces plays a leading role. In the metropolis, this free stratum has developed with a new complexity and characteristic conditions, as a result of the construction of a broken, fragmented spatial system. In this context, unoccupied space takes on great relevance, both quantitatively and in the definition of its shape. Infrastructure corridors, geographic and ecological corridors, waterways, woodlands, larger wooded areas, abandoned or flourishing primary businesses, unoccupied steep ridges, large parking lots or mosaics of small private gardens usually make up part of this unorthodox system which is peculiar to each metropolitan area.[1]

In some of these large cities, part of this complex system is made up of a preferential space of special characteristics, owing to its qualities and dimensions, which can be referred to as the Metropolitan Central Park. This product which is exclusive to large cities is an important attribute when it comes to defining contemporary metropolitan areas and is the object of this study.

These are large-scale parks, publicly owned and for public use, which are managed by the public administration and that come to have their own civic institution.[2] In these, the greenery is man-made according to aesthetic and functional criteria, and is the leading element. Moreover, due to their qualities and contents, these parks are characterized by their service to metropolitan scale recreational demands, and offer facilities, activities and events with a drawing power that reaches beyond their local area.

Our interest lies in the conditions of parks as an artefact for metropolitan recreation in surroundings in which plant matter predominates. Far beyond their landscape benefits, there is a whole range of urban contents on which their success and good service to the city depend.

We find parks all over the world that meet these conditions. Sometimes they are cases with an emerging value or in the process of definition. Other more consolidated cases teach us that there are different ways of being a central park.[3] Some of these differences are due to their distinct origin and others are the result of the diversity of the recipes in the mix of urban content in the park.

The history of each park, its origin in time and in circumstances, is a key part of its own identity, defines some of its qualities and represents a particular precedent or contribution to the cases that succeed them. The aims pursued, aesthetic values expressed, uses prioritized, motives behind the project or the way plant matter is treated, for instance, have evolved or varied throughout history, and we can find an accumulation of signs of this evolution in the different cases studied.

To illustrate this argument, it is worth looking at the case of Tiergarten in Berlin. Here the network of axes and radial paths, which gave substance and reference to the hunting forest open to public thoroughfare, intertwines with the web of winding footpaths and many landscape scenes superimposed by the project of P. J. Lenné (1818-1832) to fulfil the requirements of a new meaning to the relationship between man, nature and recreation. The adaptation of the lawns and meadows of Central Park in New York underwent in the 40s in the 20th century is also an eloquent expression of this argument. The contained interior spaces that the original project of Frederick Law Olmsted counted on for passive family recreation were recycled into active spaces with sports courts during the management of Robert Mosses as Commissioner of the Park Department of New York.[4] Although this is not the object of discussion in this article, these instances serve to demonstrate the relevance the origin and history of parks bear in their contemporary constitution.

Different origins and also different contents seem to be directed towards defining one singular metropolitan quality, the one which represents the central park through values such as centrality, the environment, singularities and mix. These values will be presented below and will be associated with four far from insignificant opportunities for metropolitan areas and urbanistics.

Centrality for order

The central attraction exerted by a metropolitan area on its surrounding territory contributes to singularly equip these parks. At the same time, their central position allows them to offer advantages with a metropolitan range of influence.

The centrality of large parks is not exclusively based on their geographic position inside an urban artefact. In the few cases in which they are central, their position acts as a guarantee for their central role. This is the case of Adelaide, in which the park, originally created as a belt around the city which was founded during the first half of the 19th century, has become the hub of the grid occupied with later growth. This is also true in New York, in this case as an interference imposed on the regular grid projected in 1811. However, in most, more or less eccentric cases, urban centrality is sustained by other attributes, among which, for instance, stand out adequate connection to transport networks and, especially, the community.

Moreover, with the concentration in one single space of a large part of the offer of certain types of recreation, spaces take on a central role such as, for instance, the Amsterdamse Bos which was projected by C. Van Eestereen as an integral part of his plan for the expansion of Amsterdam. It was designed in an eccentric position to provide the future city with a concentration of sport activity and open air recreation.[5]

The role of certain architectures or confirmed collective reference activities in defining the central role of parks cannot be forgotten either. This is exploited, among others, in the Ibirapuera forum in Sao Paulo, the work of Oscar Niemeyer. Here, the buildings belonging to the Museum of Modern Art, the Auditorium and three more halls are joined together by a concrete canopy which is, perhaps, one of the most singular spaces of beauty in the city. The concentration of state-of-the-art cultural facilities becomes an expression of attributes that are peculiar to the metropolis.

After all, the certain or potential centrality of metropolitan parks is based on the presence of certain compatible diversity. The central park is basically a free space, but it is not an empty space. It tends to be filled with things, that is, things that are more separated from each other than in the city and that often leave softer prints. Other types of distances separate urban things in parks, different to the ones in the city. And it is precisely from the space between these that one of the main values should arise: a qualified landscape experience in environmentally qualified surroundings.

The centrality of large parks is, then, a question of position, connection, concentration and significance. Thus, the fact of the availability of these parks which fulfil diverse instruments of centrality can be presented as a remarkable opportunity to enrich the constitution of the metropolitan area, contributing to its order and the centralized satisfaction of particular collective needs revealed by this.

Ecological values for equilibrium

The challenges facing large metropolitan areas as far as their environmental equilibrium is concerned are undoubtedly of great magnitude and relevance. The city is an *incomplete heterotrophic ecosystem*, which means its equilibrium cannot be considered without including entry and exit environments (concerning energies at the end of the day), and it can be seen that it is an entropic disaster for the overall stability of the Earth system.[6] Even so, the contribution of biotic diversity established in parks, of the quantity of plant matter, and the low impact on the land has an effect on the urban environment which is to be considered and which is to a certain extent an improvement. The fact is that the gathering of “greenery” that large central parks represent increases the ecological values inherent in any urban plantation.

If, for instance, we consider the ability of plant matter to accumulate carbon gases (causing the greenhouse effect) in their tissues thus decreasing their concentration in the atmosphere, and above all the fact that the park space results in a notable interruption of infrared reflections between buildings while in turn the unpaved ground guarantees an absorption of 10% less solar energy, we can say that a central park offers a cool patio which contributes to a temperature drop in the city, thus slightly balancing the tendency it has to overheat.

Other mechanisms offer environmental advantages, for instance, the use of certain plant buffers which work as particle filters that can ensure these are not deposited in certain water reservoirs. Besides, the guarantee of clean drainage through non compacted soils is a favourable action for the maintenance of aquifers. The possibility that the water cycle is reproduced in full in the park, sometimes with the help of harvesting and recycling techniques for irrigation, is another of these mechanisms.

In cities in which air pollution is especially high, such as Mexico City, the old idea of a large park as a lung is gaining momentum, in the same way as the ability of the forest mass to refresh the air is capitalized on in Chapultepec to balance the tendency of the city to overheat.

The case of Philadelphia, on the other hand, suggests the suitability of a park to influence the quality of water resources. The fact is that Fairmount Park, nowadays the central park of the large metropolis, has its origin in the initial purchase of protected land upstream of the collection point, in order to ensure the cleanliness of the urban water supply.

Thus, even more than the landscape equilibrium of the metropolis that a central park can contribute to, its ecological values bear an effective, potential influence on the environmental equilibrium of the urban ecosystem. This is why a central park, as a space with a potential for improving environmental conditions in a large city, opens up a series of opportunities for a more sustainable equilibrium of a metropolitan area.

Singularities for identity

Central parks are very singular spaces, and contain attractions and values inside them that are also singular.

Their customary close relationship with their geography (singular to each metropolitan area) contributes to this, as in the case of the prominent wooded isle of Vancouver (subsequently converted into a peninsula to incorporate its singular ecological and scenic value in the city), or the banks of the river Schuylkill in Philadelphia. The effect of the climate also contributes to the diversity of outdoor activities or the type of vegetation that grow in them. In no way do the woodlands of Mexico and Berlin look alike; both because of the species forming them and the activities that take place in winter, for instance.

The establishment of the most prestigious institutions and facilities that are often exclusive to each city also contributes to this differentiation. The Reichstag, the Metropolitan Museum of Art, Buckingham Palace, and other unique places in the world are found in a large park. Likewise, we could also mention some singular mass events, at times with an international appeal, which are held in some of the cases studied.

While there are certain “products” of metropolitan areas that can be found to be repeated with a similar appearance in very different coordinates (both geographical and cultural), the system of unoccupied spaces and especially the central park are a constituent element of metropolitan areas that refuse to be generic. Whether it is because their geography is usually a determining factor in their shape and image as is their climate; or due to their length of permanence which is often historical; or owing to other conditions derived from their particular offer of urban contents; they are a singular, characteristic element in each metropolitan area.

Hence, central parks, a singular space with singularity, represent an asset for the identity of their respective cities. And this is an opportunity to consider, in the light of the growing entity that the discussion of the nature of metropolitan areas and the competition between them has been taking in recent decades.[7]

Mix for invention

The fourth value of central parks to be highlighted here is the mix, which is understood as an opportunity for urban invention. The particular mix of materials related to the environment with others typical of the urban artefact that takes place in these singular spaces is in itself a field of reflection of great interest for urbanistics. In these parks there is a promiscuous mix of events, often simultaneous, owing largely to their great size.[8] What is more, inside them you can find different types of movement mixed together, different ways of managing spaces which are devoted to different activities: sport, culture, shows, entertainment, relaxation... The resolution of this diversity in a harmonic system requires solutions that are, often, of original complexity.

If we were to make a list of all the urban utilities offered by these parks, it could be said that they are very different activities, with few opportunities for order, or even likely to be spread out as far as possible all over the city. However, they share spaces in the cases of parks with a central role in the metropolitan area. They often do this very efficiently, sometimes with conflictive contacts, and in the worst case we find mutual ignorance separated by a residual shade of green.

The nature of the conflict of utilities that parks cause is the reason for the creation of innovations in the use of urban space and the domain of their functional fitting out. One example is the case of New York and the segregated system of pathways and roads that never intersect at the same level. Olmsted and Vaux bring to light a project resource to make the most of park space which will then be used in the project of the modern city, from Le Corbusier to the Smithson.

The project of Bois de Boulogne, under the charge of the engineer and gardener A. Alphand and in the area of the Grands Travaux of Paris directed by Haussmann, is a clear exponent of diversity of utilities as the main attraction of the park. Here, in a mosaic of compatible functions, large exclusive facilities (hippodrome, zoo), multi-functional recreation areas (Pré-Catelan articulated, in a hollow, a strolling system with cafés, exhibition halls and an open air theatre), formal gardens and wild, wooded areas, all merge.[9]

In the case of Saint Petersburg, the Soviet park creation programme for the new socialist city proposes a multifunctional pattern along three well-defined lines (culture, physical exercise and relaxation), and groups the different facilities for each sort of utility on one of the islands that were to make up the whole. In Bogotá, there is the case of a park created in a fragmented way, with successive actions and projects that have provided the system with an ever more varied offer.

Perhaps the central park is not a space of great intensity of use, or great quantitative density, but it cannot be denied to have a certain diversity and, at the end of the day, a particular mix which contributes to the definition of a singular centrality, with qualitative density.

Out of the care and will to act on urban spaces with greatest conflict, with the largest mix, is where the most ingenious individual or collective solutions are born. The conflict of mix requires an analytical effort which produces complex projecting motives that are sometimes surprising and original. Thus, the mix present in the park makes it a laboratory for invention.

Four values for four oppotrtunities

Thus, we have approached a definition of the aim of the study as a cultural construction over history which is materialized in specific cases of composition depending on the time and place

they were constituted. Instruments of centrality, ecologic values and singular qualities come together in them in a diverse mix with its own peculiar conditions. Then it evolves into a metropolitan centrality with a qualitative density that can be an asset for the order, equilibrium, identity and enrichment of contemporary metropolitan areas.

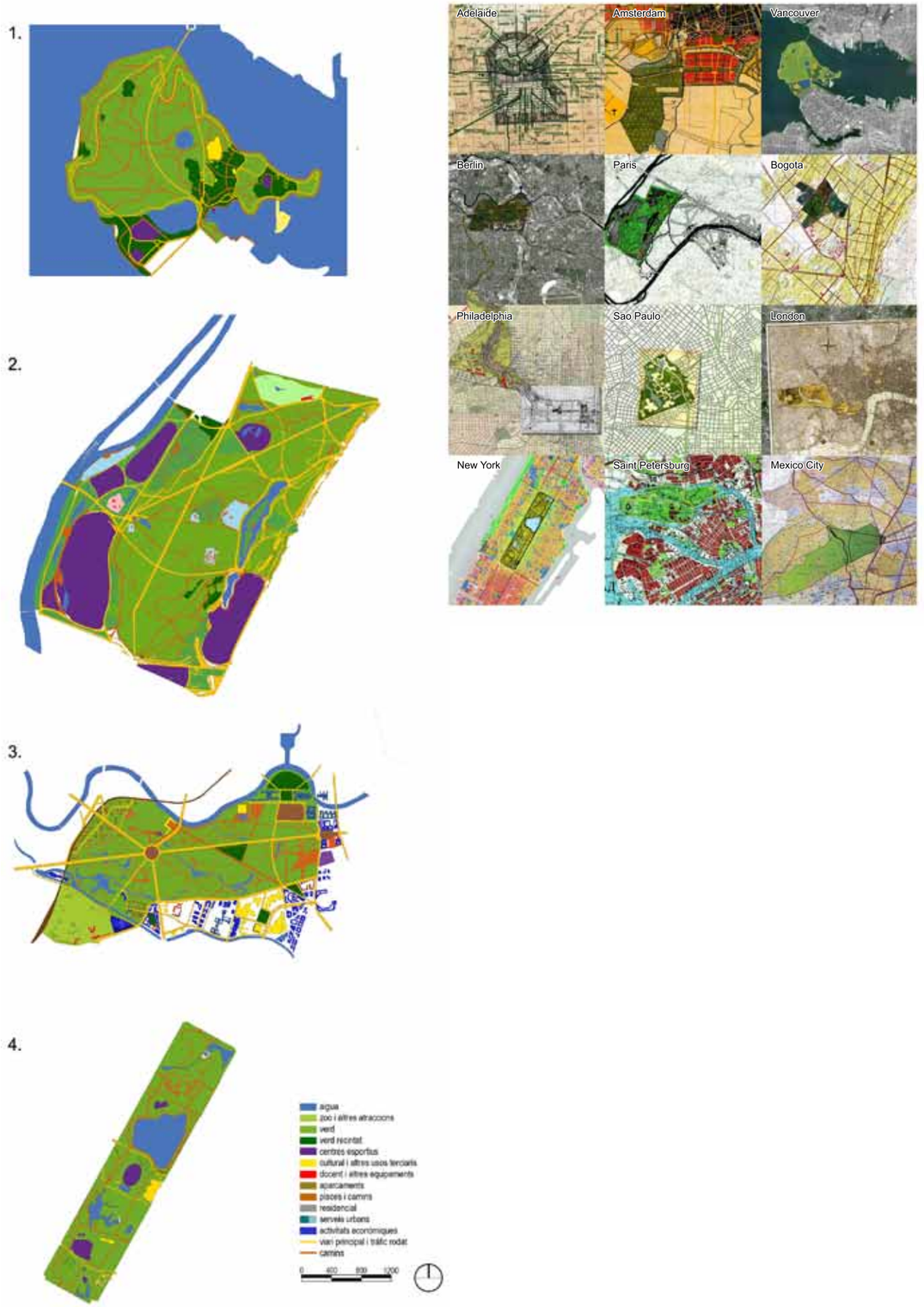
Several authors interpret the birth of the concept of landscape park - at the beginning of the 19th century - as an anti-urban reaction that sought the production of balsamic or therapeutic spaces to get away from the city. Today, the concept of these large parks has taken a 100% urban orientation, whether because the concept of city has incorporated natural values as its own or because the concept of park has demonstrated that certain urban and metropolitan values are characteristic of their nature.

Our research aims to defend the hypothesis that these large parks represent another type of urban centrality in the metropolis, a “soft”, very low density, centrality which is both attractive and mixed. We aim to confirm and assert the urbanity of the central park. Urbanity as a civic condition of the space which makes it especially appropriate for collective social practice, and urbanity as a value of the physical space, of its spatial, dimensional and material conditions.

Notes:

[1] See, for example, Batlle, E., El jardín de la metropolis: del paisaje romántico al espacio libre para una ciudad sostenible, Gustavo Gili, Barcelona, 2011.
[2] For further details about publicity and large parks see, Beardsley, J., Conflict and erosion: the contemporary public life of large parks, in ID, Large parks, Princeton Architectural Press, New York, 2007.
[3] In this essay we will take: Adelaide, Parklands, 1100ha; Amsterdam, Amsterdamse Bos, 930ha; Berlin, Tiergarten, 220ha; Bogotá, Parque Simón Bolívar, 113ha; Philadelphia, Fairmount Park, 1000ha; London, Hyde-Green-St.James Park, 280ha; Mexico City, Bosque de Chapultepec, 645ha; New York, Central Park, 350ha; Paris, Bois De Boulogne, 845ha; Saint Petersburg, Kirov Park, 550ha; Sao Paulo, Ibirapuera, 180ha; Vancouver, Stanley Park, 405ha.
[4] Cranz, G., The Politics of Park Design: a history of urban parks in America, The MIT Press, Cambridge, 1982.
[5] For further details see, Berrizbeitia, A., The Amsterdamse Bos: The Modern Public Park and the Construction of Collective Experience, in Corner, J. ed., Recovering Landscape, Princeton Architectural Press, New York, 1999.
[6] See, betwen others, Odum, E., Fundamentals of ecology, Saunders, Philadelphia, 1971. Bettini, V., Elementi di ecologia urbana, Giulio Einaudi editori, Torino, 1996.
[7] See the answer to the Koolhaas’ Generic City by, Solà-Morales, M., (1996), Contra el modelo de metrópolis universal, in ID, Arquitectes en el paisatge, Girona: Col·legi d’Arquitectes de Catalunya, 2000.
[8] See the reflexión upon large scale elements at OMA, SMLXL, 2ª ed., The Monacelli Press, New York, 1995.
[9] Alphand, A., Lés Promenades de Paris, J.Rothschild, Paris, 1867-1873.

Legenda jpg:
Urban utilities in four metropolitan central parks:
1. Stanley Park, Vancouver;
2. Bois de Boulogne, Paris;
3. Tiergarten, Berlin;
4. Central Park, New York



Guilherme Lassance
Federal University of Rio de Janeiro, Brasil

Reviewing design references with diagrams

Introduction

Never in history there has been such diffusion and access to information about the architecture produced worldwide. Websites, blogs and specialized electronic journals on the subject abound. In this text, we do not intend to map or analyze this widespread content, but rather address its implications for design teaching, especially in schools geographically distant from the main centers of production of contemporary architecture. It is relevant to note that most part of the architecture produced and published in the last two decades, when the Internet appeared and flourished, is concentrated in areas with privileged political and economic conditions. Unable to have direct contact with such production, students from other parts of the world become inevitable hostages of a superficial consumption of design references accessed only through images when working on their academic projects. Local architecture seems to be no longer useful for those means.

The aim of this paper is therefore to discuss the theoretical foundations of a strategy for identifying, analysing and representing design references that are locally rooted and accessible for direct embodied experience. We argue that this strategy can take the form of analytical spatial diagrams of different case-studies presented as a tour guide for the recognition of the architecture produced in a far away but bustling metropolis like Rio de Janeiro in Brazil.

Indeed, the announcement of major sporting events scheduled to take place in Rio de Janeiro in the coming years is now attracting the attention of renowned architects of the international circuit. They should not find much difficulty in competing with local offices in major contracts, since the professional field of architecture was strongly affected by the economic crises of the past and yielded to the rules of uncritical marketing. Completely absent from the pages of any good collection of contemporary architecture, local projects reproduce autistic formulas devoid of experimentation and innovation regarding the current debated about the contemporary city. Much of what was achieved in terms of innovation in the best architecture produced in Rio while it was the capital of the country has been simply overlooked or ignored by today's real estate market. There is indeed a kind of resigned consensus among local architects that relevant architectural references have not been produced in the city for a long while. It is thus really hard to establish an itinerary for any architectural tour that would not necessarily, and almost exclusively, include the long-standing references of the celebrated Brazilian modern architecture of the 1940s-1950s.

Besides being consumed in a superficial manner, international references always carry the difficulty of linking to local context, both in terms of the physical immediacy and in the wider cultural sense, relating to the peoples' modes of living and inhabiting the city. These references are rarely compatible with the local cultural, social, economic and technological realities, thus contributing to the traditional and endemic separation between the academia and the professional practice. While outside the academic environment these imported architectures do not operate as design references, in schools they assist the effort of confronting the precariousness of most of the daily spatial experience of our students with richer and more meaningful architectural examples, hardly helping to overcome the 'absence' of concrete, built and actual demonstrations of recent production to be studied.

Changes in design attitude

The 2008 edition of the Verb Boogazine, entitled 'Crisis', edited by the Catalan publishers Actar (Ballesteros et al., 2008) stated in its announcement that 'architecture cannot continue to be made as usual', referring to the crisis of the traditional architectural market, which came to strengthen and accelerate the critical tendency of challenging the production of iconic objects signed by the so-called 'star system' architects. In an article entitled 'Death in Venice', Cédric Libert (2010) develops this question about a whole generation of architects of the first decade of this century, among which are Frank Gehry, Zaha Hadid and CoopHimelblau.

While the curator of the 'Beyond Architecture' 2008 Biennale wagered on the 'icon-giver architects', the 2010 edition, coordinated by the Japanese architect Kazuyo Sejima, assumed and emphasized, instead, the critical reaction to the production of iconic objects. Using the theme People Meet in Architecture, she sought a 'return to discipline' operated by research on space and experience. The beginning of the sequence of the Arsenale set the tone of the show. It displayed in 3D format a film directed by Wim Wenders about the Rolex Learning Center of the Federal Polytechnic School of Lausanne, designed by SANAA Studio - which Sejima shares with Ryue Nishizawa - revealing it is more an infrastructure to be experienced than an object-icon to be admired from a distance.

Quarreling architecture autonomy

'The dichotomy between consciousness and the object is exposed, expressed in the disparity between the space depicted through the perspective and the space actually experienced by the subject' (Kuma, 2008). The space whose qualities are supposedly controlled by the isotropic and abstract geometry cannot resist the displacement of the observer and therefore its effective experience of architecture. Evoking the work of Beatriz Colomina (1996), Kengo Kuma underscores how the architectures of Le Corbusier and Mies van der Rohe were dependent on the means of contemporary photography and therefore the production of monochrome images, being thus conceived as recognizable objects to be viewed from a certain distance. To this end, they had to be clearly separated from their contexts, isolated and detached from the ground by means of pilotis (Le Corbusier) or podiums (Mies van der Rohe).

This 'formalist' modern tradition takes on later the monumental version transforming itself into a great reference for international iconic architecture. Kuma opposes this architecture to the qualities of openness and lack of space proposed by traditional Japanese architecture. The author of the Anti-Object recalls the visit of Bruno Taut to the Katsura Imperial Villa, where he said that there is no attempt to create an object. He goes on evoking the fact that Taut compared it to the scene of an outdoor theater, which is essentially a place of absence until the addition of people, clothes and colorful cushions creates various spaces - which he calls 'architecturalized interrelationships' - concluding that it is through them that one can establish the relationship between space and time in architecture.

It can be seen just how much we move away from the paradigm of an autonomous and isolated object to approach the idea of an infrastructural architecture type, spatially continuous with ambiguous boundaries with its environment. The 'landscape-building' of the Rolex Center, like much of the work of Sejima and Nishizawa, invests on the idea of the anti-object, opening a prospect of redemption of design modes experienced in the past but that have become invisible in a world of frenzied consumption of images and visual cues. Motivated by these issues, young foreign architects have seen in Brazilian modern architecture some design strategies to be recycled and re-incorporated. Those who stay a little longer will be able to recognize, beyond the possibilities of visual reference, a pragmatic and intense connection of the architecture with its surroundings, the unexpected, unplanned and informal détournement favored and encouraged by the simplicity and ambiguity of the spaces.
Buildings that serve as ground-organizers of intense flows and as platforms of events reveal how the contemporary metropolis work, irreverent to its photogenic architecture, combining their processes in complex ecologies. Such traces could find reference in the notion of 'metropolitan' condition, insistently put forward by Rem Koolhaas and his OMA and AMO partners (Koolhaas, 1978; Koolhaas & Mau, 1995; Koolhaas et al., 2000; Koolhaas, 2004). Everywhere in these same cities you can come across situations and achievements that have become unrecognized because they were taken for granted, unconsciously naturalized or simply ignored by architects.

Beyond beauty and uglyness

This way of looking implies, therefore, in a denaturalization of the concepts of beautiful and ugly. This is essential to the attitude of transcending the external appearance or superficial image, which is often 'out of date' or misconceived, to access a more structural and diagrammatic level of analyzing space (Lassance et al, 2010): a perceptual attitude adopted by Rem Koolhaas (1978) when learning the 'invisible lessons' of New York. More recently, we can cite a very inspiring source for this research: the amazing Made in Tokyo (Kaijima, Kuroda & Tsukamoto, 2001). In this architectural research presented as a tour guide for the city of Tokyo, the authors look at what they claimed to be the 'ugly' or at least the not celebrated part of the Nipponese capital and reveal a number of situations strongly aligned with the current debate on the problems of the contemporary metropolis. The map of Tokyo re-presented through their 'invisible' architecture thus reveals 'another city', subverting the order imposed by the traditional monuments and worldwide renowned design references.[1]

As we can see on this map, the invisible lessons of Tokyo are represented through axonometric diagrams. These are just schematic illustrations used to subvert and surpass the level of visual apprehension commonly high-valued by the well-calculated photographs and rendered views of the electronic journalism. Stripped of their apparent aesthetic precariousness, the invisible lessons of Tokyo might have the chance of being considered by the biased eye looking about for design references relevant to the contemporary culture.

The transaction contained in this simple strategy of re-presentation is very powerful and totally in tune with the intention of promoting change in the way we design and understand design. If we think retrospectively, we can note that the use of alternative representational resources is typical of moments of crisis of paradigms, in which the formal prescription propagated by a certain existing code system is to be criticized and re-discussed through new values. Devoid of visual compositional codes that could be legitimated or rejected, architects use schematic representations as a means to escape or delay decisions regarding the visual appearance of the building, submitting them to the programmatic imperatives less prone to the momentary instability of the aesthetic debate. The well-known distinction between form and design introduced by Louis Kahn or the attention given by Aldo Rossi to the concept of type, drawn from a nineteenth century definition, illustrate the moment of transition from modernity to the arrival of the late modern post-critical debate in the second half of the last century as put forward by Antony Vidler's thesis on the 'Third Typology' (Vidler, 1976).

Gabriela Goldschmidt and Ekaterina Klevitsky (2004) elaborate in that sense, an excellent and very informative analysis of a collection of axonometric drawings produced by the office of the English architect James Stirling as a means to overcome the thorny question of the external appearance of projects and to value the experience and intelligence of space design. 'There were architects who were dissatisfied with "conventional" means of representation and found it necessary to display their work somewhat differently in order to express its meaning fully' (Goldschmidt & Klevitsky, 2004:47). Quoting Stirling's partner, Michael Wilford, they remember how important it was for those architects, 'to be able to represent the essence of the idea' and the "architectural understanding of the building", as distinct from an impression of how it might look in reality' (Wilford, 1996:32, cited by Goldschmidt & Klevitsky, 2004:56).

The 'attitude' driven by Made in Tokyo is inspired by the theories advocated by Stirling's contemporary architects that, in Japan, were also experiencing a moment of transition. The authors of the guide confessed their debt to Kazuo Shinohara, an important advocate of a rereading of the Japanese tradition as a means to counter the rationality of modern architecture. His ideas later evolved into an appreciation of the chaotic nature of the Nipponese urbanity (Shinohara, 1981), inaugurating a series of texts from various authors, who pointed to the need for studying the specificities of the Japanese city and its architecture (Nussaume, 2004). These texts greatly contributed to the development of newer design methods that sought in the use of space diagram a means to overcome the issue of the external appearance and, as noted by Toyo Ito in his famous analysis of the work of Kazuyo Sejima, 'to abstractedly describe the mundane activities presupposed by the structure' (Ito, 1996:18). In an interview with Hans Ulrich Obrist for the 2010 Venice Biennale, architects Yoshiharu Tsukamoto and Momoya Kaijima of the Atelier Bow Wow, co-authors of Made in Tokyo, value the criticism towards formalism that pervades this new posture. They cite Bernard Rudosky's Architecture without Architects (Rudofsky, 1964), confessing that one of their goals is to make a building that would not be done by architects.

This attitude illustrates the analysis carried on by Gerrit Confurius in his Editorial for the special issue that the magazine Daidalos dedicated to the concept of diagram, reminding us that 'it also reflects the spirit of the time by minimizing the importance of the artist as a creative individual and presenting architecture as something that is socially constituted and interactively produced, as a field of resonances and virtualities' (Confurius, 2000).

Metropolitan performance assessment

The axonometric diagram was thus the strategy best suited to our purpose of transcending the usual diffusion of design references that usually favors a visual apprehension of architecture. Besides using this type of diagram, the track invested by the Made in Tokyo Guide drew our attention to some issues related to the condition of contemporary architecture in the metropolis. The Japanese authors emphasize the hybrid quality of the presented cases, reiterating what had already been identified by Rem Koolhaas in his new yorker manifesto, as a typically metropolitan condition.[2]

A closer look at the conditions of our metropolis allowed us, however, to incorporate other issues that are also very present in the debate about the role of architectural design in the contemporary city. In our study of the architecture of Rio, we integrate thus the crucial problem of urban mobility associated with transport infrastructure projects, the articulation of multiple flows and the concept of 'obliquity', proposed in the 1960s, by Claude Parent and Paul Virilio (Virilio and Parent, 1967). We also considered as highly relevant, the phenomenon of informal, unforeseen and ephemeral appropriations, that have been subverting the monofunctional and specializing logic of the existing space, drawing our attention to the need for designing reprogrammable fields (Allen and McQuade, 2011), much more attuned to the opportunistic temperament of our globalized cities. Our study also addressed the question of the optimization of urban land driven by the concentration of activities that Rem Koolhaas and his team called the culture of congestion (Koolhaas et al., 2000), justifying and enabling the creation of new territories in areas of difficult occupation as steep slopes and even on water.[3] Finally, the question of the image from which we seek to escape was not ignored, because we understand that it has a rather important role in market processes that are currently taking place in the contemporary city. This paper differs, however, from the understanding that we, architects, usually have of its treatment as a mere means of adjectivating the external appearance of designed architectures. The composition of the metropolitan image of the contemporary building incorporates, on the contrary, an own dimension, as an autonomous project, behaving as a true communication interface in which the 'skin' becomes a 'screen' (Scoffier, 2011). These questions guided the definition of 5 major categories of criteria used for the selection and the evaluation of the architecture produced in Rio (see Table 1).

ASPECT	NOTE	TYPE	DEFINITION
PROGRAM	0	Monofunctional	the project have only one function
	1	Multifunctional	the project have more than one function
	2	Mutualistic	the activities benefit each other mutually
FLOWS	0	Controled	the project considers only one type of flow
	1	Managed	there is a specific device for each kind of flow
	2	Articulated	the project interconnects different flows
STRUCTURE	0	Restrictive	physical and spatial structure restricts activities
	1	Flexible	structure allows program transformations
	2	Polyvalent	structure allows different activities with little adaptation
IMAGE	0	Resultant	Image is a simple result of other aspects
	1	Adjective	Image is intentionally studied to promote content
	2	Autonomous	Image is a project in itself, establishing its own rhetoric
SITE	0	Occupied	the ite is partly occupied
	1	Optimized	the site is fully and intensively occupied
	2	Recreated	project envolves the creation or re-creation of the site

Table 1

As we can see in this table, each category assumes a particular design aspect that is then valued to retrieve current metropolitan issues: the mutualistic program of the hybrid building, the articulated flows of huge mass transportation hubs, the polyvalent

structure of the opportunistic generic space, the autonomous image of the mediatic facade and the recreated site associated with the redesign of hills and waterfronts through landfills and terracing techniques made economically feasible thanks to the specific conditions of the metropolis.

Representing an unnoted architecture as a design reference

In order to illustrate our apprehension of the architecture built in Rio de Janeiro as a design reference and the difficulties associated with it, we present here an example of unnoted architecture located in the city center. The case presented here is the Menezes Cortes Garage Terminal, built in the early 1970s to increase the number of parking places in the city center. Besides the parking, the building houses a shopping center, an intercity bus terminal and a university level school. Although its metropolitan performance, this building is completely absent of any guide of architecture and its authors are unknown.

Here, we surrendered ourselves to the 'difficulty of getting good pictures' that would make possible to enhance, explain and communicate what we believe is an relevant design reference in relation to the conditions of the contemporary metropolis. This allowed us to see that the 'photographic medium' by which architecture today is promoted and consumed worldwide via the Internet was clearly limited and inappropriate.

How then to explain the complex and overlapping levels of access and opportunistic and changeable combination of uses and activities with a simple camera shot? How to avoid repeating the old anthropological clichés of the precarious look and improvised design? How to convey the intelligence of the spatial structure beyond their unresolved appearance? Are we, the architects of the Internet century, eternal hostages of purely visual consumption of inhabited photogenic references inert to the frenetic everyday life of our cities?

Figure 1 hereafter re-presents, in a diagrammatic way, this building, showing how graphic strategy can be used to reveal its incredible metropolitan qualities related to its very mutualistic program, the way it articulates different conflicting flows, the flexible grid of the parking garage floors and its optimized site, transcending thus its resultant ugly appearance.

Figure 1

A critical analysis, whether recent or historical, could easily deprive this building of much of its qualities as a design reference. If we intend to address the real challenges of the contemporary metropolis, we must therefore provide resources for new modes of reading, understanding and representing architecture that could make them truly powerful in the design process, working as a means for the critical recognition of the unnoted lessons of architecture existing in our cities.[4]

References

Allen, S. and McQuade M. (eds)., *Landform Building: Architecture's New Terrain*, Lars Muller Zurich, 2011.

Ballesteros, J. et al., *Verb Crisis*, Actar, Barcelona, 2008.

Colomina, B., *Privacy and Publicity: Modern Architecture as Mass Media*, MIT Press Paperback, Cambridge, Mass., 1996.

Confurius, G., *Editoral*, in « Daidalos », 74, ('Diagrammania', special issue), 2000, 4-5.

Goldschmidt, G., & Klevitsky, K., *Graphic representation as reconstructive memory: Stirling's German museum projects*. In G. Goldschmidt, & W. L. Porter (eds.), *Design representation*. Springer, London, New York, 2004, 37-61.

Fenton, J., *Hybrid Buildings*, in « Pamphlet Architecture », 11, Princeton Architectural Press, New York, 1985.

Ito, T., *Diagram Architecture*, in « El Croquis », 77, 1996, 18-24.
Kaijima, M., Kuroda, J., & Tsukamoto, Y., *Made in Tokyo*. Kajima, Tokyo, 2001.

Koolhaas, R., *Delirious New York: A Retroactive Manifesto for Manhattan*, Oxford University Press, New York, 1978.

Koolhaas, R., *Content*, Taschen, Köln, 2004.

Koolhaas, R. et al., *Mutations, Actar, Barcelona and Arc en Rêve Centre d'Architecture*, Bordeaux, 2000.

Koolhaas, R., & Mau, B., *S, M, L, XL,* The Monacelli Press, New York, 1995.
Kuma, K., *Anti-Object: The Dissolution and Desintegration of Architecture*, AA Publications, London 2008.

Lassance, G., et al., *Contemporary Metropolitan Conditions: new challenges for design education*, in G. Schmitt, L. Hovestadt,& L. van Gool (eds.), *Future Cities, Proceedings of the 28th Conference in Education and research in Computer Aided Architectural Design in Europe* (eCAADe), ETH, Zurich, 2010, 119-128.

Libert, C., *Mort à Venise*, In « Face B », 3, 2010, 11-37.

Nussaume, Y., *Anthologie critique de la théorie architecturale japonaise : le regard du milieu*, Ousia, Brussels, 2004.

Rudofksy, B., *Architecture Without Architects*, MOMA, New York, 1964.

Scoffier, R., *Les quatre concepts fondamentaux de l'architecture contemporaine*, Norma, Paris, 2011.

Shinohara, K., *Towards Architecture*, in « Japan Architect », 293, 1981, p.15.

Vidler, A., *The Third Typology*, in « Oppositions », 7, 1976, p. 1-4.
Virilio, P and Parent, C., *Architecture Principe*, Les Editions de l'Imprimeur, Paris, 1967.

Wilford, M., *Wilford, Stirling*, Wilford & Partners, Royal Institute of British Architects, London, 1996.

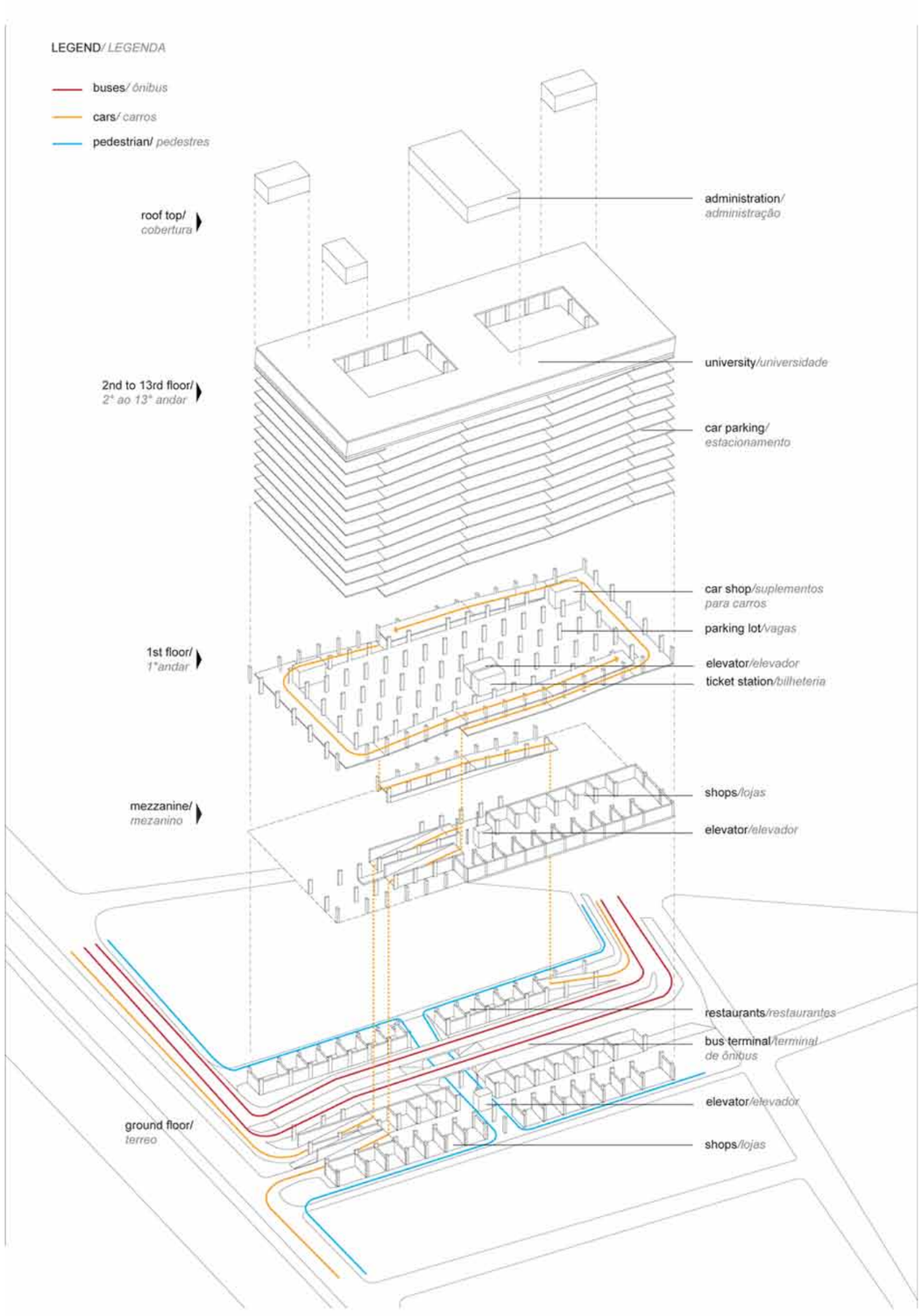
Notes

[1] See this picture at: http://www.dnp.co.jp/museum/nmp/madeintokyo_e/map/mapfr.html

[2] The issue of Pamphlet Architecture specially dedicated to this topic, not only recalls us that the hybrid building has been a condition intimately associated to the urban dwelling with its street front shops since the ancient times, but it also uses axonometric diagrams in order to show the complexity of the programmatic composition of some externally quite simple buildings (Fenton, 1985).

[3] It is not a mere coincidence if two of the main influential authors of the contemporary architecture circuit have recently published their research on Japanese metabolists (Koolhaas & Obrist, 2011).

[4] We recently received support from Rio de Janeiro State Research Funding Agency (Faperj) to publish a guide of metropolitan architecture of Rio. We would also like to thank the Brazilian Agency for Higher Education Human Ressources Development (Capes) that has provided financial assistance enabling us to attend the EAAE/ARCC 2012 Conference in Milan.



Emilio Corsaro, Raffaele Mennella
Università di Camerino, Italy

The transformation of cities

In the German culture, the idea of 'inhabiting the memory' of one space is captured by the expression *Heimat*. The latter refers to the intrinsic meaning that we assign to a place perceived as 'owned' and 'formative'. *Heim* (home) and *Heimat* (fatherland) have the same root: the former alludes to something perceived as domestic, the latter refers to those known places where we feel to be safe. However, today the Heimat represents only one dimension of the multiple spaces where we live; sometimes, it does remain only a memory, instead of an inhabited space. The spaces where we live preserve and conserve not only the memory and knowledge of facts, but also of their meaning and value, thus, of the potential continuity linking facts through *memory at work.*

Despite its disproportion, is it still possible to think of a city, that is, a collective inhabited space, as a house? Here, with the expression "city", we embrace a definition which is less historical but more consistent with their current size. In fact, the latter goes beyond the ancient perimeters of cities and is in line with multiple uses of these inhabited spaces, intrinsically collective and conflictual. In our understanding, the distance between the "city of the past", with its ability to transmit "identity" and sense of belonging, and the "city of today," arises from the fact that reminding and transmitting memories require time and documentation. That is, they call for an education which is not aligned to the current attitude of "living - using - disposing -consuming-dissipating".

Edgar Reitz's fresco (1984) takes a small community and an imaginary village in south-west of Germany (*Schabbach*) as the paradigmatic place where the term Heimat acquires its own specificity: this is the place of the origins and belonging. In the second part, the big city captures the German identity of the decade 1960-1970. Monaco becomes the new homeland-capital for those years: Berlin is lost, large companies as well as young people looking for a new identity and new opportunities move to Monaco. The second episode of Heimat is subtitled "*Chronicle of a Youth*". Here, the main character together with his South American friend, will look for a new homeland in this "new" city, Monaco. The Heimat is not given, it is chosen! The latter emerges as an optimistic attitude towards change, the value of music, of arts in general and, finally, an "universal" culture. Also, this part highlights the need for finding new roots for creating a new homeland without borders, a new space where differences and specificities confront each other in a sort of dialogue. The third episode is more uncertain. The period considered is characterized by the fall of the Berlin Wall, as it is often stated in a justificatory or liberating manner. The main character is now "aged" and decides to go back to Schabbach. Does this choice resemble those nostalgic and propagandistic claims that pretend to 're-acquire' the Heimat (considered as a surrogate for safety) together with the love for the inherited city in which our identity is preserved and defended from the barbaric invasions? After the fall of the Berlin Wall, in the case of Dresden the negligence of the D.D.R. on the one side and the formality of the B.D.R. on the other lead the reconstruction of the "wonderful" historical center with its monuments, "as it was, as they were". Similarly, Berlin rebuilds Schinkel's Bauakademie by imitating Stadtschloß, while Frankfurt demolishes the buildings of the seventies located in one side of the cathedral's square and rebuilds them inspired by the medieval frame houses. Is it possible to compensate the lack of identity of 'undifferentiated spaces' with references to the mannerism from the past? Are the guardians of the Heimat reassured by this scenography more than being worried by the 'non-quality' in buildings (i.e. "*Schlimm bau*")?

The possibility of rediscovering a new road characterized by optimism and trust relies on a profound belief in the plurality of facts and objects, in the right combination and sovrapposition of conservation and innovation. If abandoned volumes can become new poles of aggregation, plastic bottles can be transformed in new yarns and garments and so on, then recycling without 'demolishing the past' becomes a necessary process in the discovery of new identities. Thus, this operation calls for a deeper understanding of the "adding" more than of the "demolishing". Namely, architectural projects have to confront the past, by understanding its intrinsic meaning (which goes beyond memory) and by discovering the elements on which its identity is rooted. As a result, additions in the space will derive from the willingness to continue writing an inherited text, a way to continue an open-ended tale.

For how long have cities lost their being a 'collective home'? For how long have we renounced to live our houses as intimate parts of collective spaces? For how long has the urban collectivity been just a sum of collectivities whose identities do not emerge through memories (meaning through a shared and understood 'Heimat'), instead do emerge through anger and nostalgia? The 'villages' we come from (also, old quarters?) can generate the intimate sense of the Heimat; however, have urban peripheries ever generated memories? In fact, it is difficult to believe so! For relational spaces, that is, for spaces of active social interactions, being able to generate memories it is necessary that they enable a collective 'transformation' together with allowing for the flourishing of singularities and exceptions, provided also that the precariousness and individualism of social and economic expectations are reduced.

In the majority of cases, Italian cities have been experiencing an expansion of their original centre. As a matter of fact, they have been expanding in a sprawled manner, very often according to modes which resemble Francesco Rosi's fresco in the "*Hands Over the City*". In the post-war period, interventions for popular housing created the urban margins. The latter were characterized by exemplary planimetric buildings, housing typologies and architectural solutions. In the '70s and '80s the "home issue" led to a set of interventions (recurring both to conventions and subsidies) through which the expansion of cities corresponded to occupation and dissipation of the countryside in the name of solving a social problem.

Throughout the years of the law "167/62", with few exceptions such the Gallarese in Milan, master plans were dominated by dismisurated forms and 'strong design'. These 'heroic' interventions that determined the 'urban form' of the emerging metropolitan city were very poor in terms of offering spaces of new relation. Interventions were led by a 'quantitative' criterium and the opportunity of cooperating for boosting economic growth through investment in the construction sector. During the 70s, these investments allowed the country to overcome the economic crisis, while the 80s witnessed a process of deregulation in construction. As a result of these measures, the expansion of cities resulted in the disappearance of those 'empty spaces at the margins', in other words of those spaces of 'urban-countryside' – a part of city/non-city – that mediated between the countryside and the compact city. In essence, before the 80s major cities were recognized as poles of attraction given the concentration of multiple services such as health, higher education, cultural. Cities vis à vis suburbs were linked by hierarchical relationships, however these structures were functional to the emergence of a sense of belonging and pride, sometimes motivated sometimes not. Thus, the peripheries were part of cities and, indeed suburbs provide "big cities" with their forms. The 80s glorified the emergence of the region-city and, as a result, the loss of distinct roles and the 'city effect' (of the metropolitan city) were theorized. Regardless of its dimension, the 'city effect' allows spaces to be recognized as meeting points.

Residential suburbs, supermarkets and malls while representing the "new" town have been unable to create new relational spaces. They have been satisfied with creating "non-places" for interactions. Analyses in sociology and architecture have acknowledged this new phenomenon and proposed the idea of recognising places through images. The same idea of monument, the one which marked and connoted historic cities by determining the uniqueness of places and a sense of pride and belonging beyond physical presence, was emptied and its underlying values were relativized. This is the result of a city expanding and dispersing in its suburbs, lacking roots and stratifications, clearly uncapable to give space to a multitude of "identities, too strong and diversified" (Codeluppi, 2007, p.78). The loss of these values has opened to a sort of "all equal" and homogenous condition, whereby everything must and can change quickly. As everything else, being places something that have to be consumed, will be substitutable. Losing the culture expressing the value of the urban space as a space of representation (commodities, thus, supermarkets and malls are the best way of representing a consumerist society, aren't they?) has negatively affected the capacity of societies and politics to address the new demands and challenges that migrations pose to cities. The city of the past grew dimensionally as a result of the attention given to residential housing, as in the 70s and 80s. However, in the former case during the 50s and 60s there was a deeper social awareness and determination. The insertions in the urban contexts of these years of new social pluralities did create conflicts but, at the same time, gradually spaces of confrontation and integration of "urban recognizabilities".

That new insertions generate contrasts and diffidence is well known. The risk of thinking of cities as the sum of recognizable parts (sort of new "Chinatown" occupying new and old areas of the city) remains pervasive and dangerous if we do not accept a fully multiethnic culture. That multicultural city contexts reacquire the capacity of enhancing spaces and valuable architectures aimed at new 'prides' that go beyond consumerist functions is not just a hope but a necessity (examples in the western culture are the Parigi of the nineteenth century, Berlin in the 20s and 30s of the twentieth century, London in the 60s and 70s and New York in the most recent years). This capacity being missed would result in situation of perpetual conflict as in the film "*La Haine*" by Mathieu Kossovitz (1995), a prophetic representation of social conflicts in the Parisian banlieues.

Do multiple collectivities and, thus, multiple 'memories', prevent the construction of urban spaces which can be knowable/recognizable by all people who live them? Perhaps overcoming such apparent impossibility might result from taking inspiration from consolidated experiences in other disciplines. Let us think of International Orchestras such as the West Eastern Divan directed by Baremboim or Dance Companies such as the one led by Pina Bausch.

It is immediate to think that arts thanks to their "universality" are able to bound multiple and diverse cultures and people. In particular, it is widely acknowledged (although sometimes only as a result of a passive acceptance) that classic arts are capable of involving and amalgamating differences, in other words that it can overcome differences through conciliations. Classic art allows to identify roads of conciliation among different parts thanks to its presence in time and the possibility of "being reproposed". The kind of art we are referring to is music, but also theatre, choral dance (*choreutike téchnē*), film, in one word all those arts re-proposed through collective efforts and the combination/coordination of individual capabilities aimed at the same final goal: the proposition and re-proposition of the art piece, its value, beauty and explanatory power also with the introduction of new and anti-conformist interpretations in the name of the modernity of art. The achievement of this goal is not obstacled by the presence of modern actors coming from different nations, as well as by the adoption of various instruments, procedures, tones, colours and times (all of them very often updated). To the art piece proposed is assigned a specific property, namely the fact that its re-interpretation leads to address those "always present" issues at the core of the representation. Could architecture in its becoming and transformation in "monument" play the same role? Through its physical determination, that is, its functional (also non immediate) and definite formal proposition, could architecture synthesize different expectations and offer spatialities mirroring the various loci of the different memories? In the western old cities, the diversity and singularity of one building coexist with the compactness and transformability of the surrounding buildings. Differently from today's main focus on environmental issues, buildings and people inhabiting them were linked by a complex set of constitutive interdependencies.

The latter provided inputs for the formation of the Heimat, that is, of a sense of belonging. How is it possible (or impossible) to reproduce a similar formative process in the contemporary city? Let's go back to the above intuition proposed here. Although an "artistic formation" is composed by diverse elements coming from different parts of the world, if they share and want to achieve the same goal of representing an "event" they need to converge, to coordinate their actions and operate as if they constitute one unique entity. This collective is guided by a common goal but, more importantly, by a shared score representing a common cultural system of knowledge. Japanese and Mexicans play Mozart's Don Giovanni in Italian language by embedding themselves in the time of the past re-interpreted for the present. Today's spaces suffers from the fact that they do not represent "no one": they represent themselves and their main commercial scope; very often, these spaces undertake a process of commodification and lose the possibility of being a "monument": they do not resemble "anyone", "anything". We believe that today's city – the metropolitan city – thanks to its being partitioned will trigger an inevitable and desirable cultural transformation whereby tolerance of differences will be achieved as first goal, then integration as a result of reasoning. Drawing from this, perhaps, it will be possible to glimpse the emergence of a new paradigm through which the "architectural representation" could/should reacquire its profound sense. Then, through architecture rebuilding the scenario for the new identities and belongings.

An Arabic-Israeli orchestra operates as a unit because it needs to construct a structure, such as a symphony, through a musical form which derives from a precise discipline: they represent where a discipline can and must lead us. As stressed by Baremboim, together with the discipline there is the 'passion' through which the Director becomes able to extract the 'domesticity' embedded in the musicians of the Orchestra, all different in culture and 'memories'

Imagining a city or one part of it as an orchestra is surely from one side too poetic, on the other too naïve. In the orchestra case all components are aware of the fact that they do depend upon the 'director' and 'magister' and that each of them is expected to follow the score that the director will interpret. Similarly, in the city case, for being located in a precise locus, all buildings have to adhere to a unique urban plan and to be consistent with a project developed by an interpreter of the general score (i.e. the development plan at different scales, the regulation etc.). Is this modality related to the single insertion in the city able to transmit the general idea contained in the development plan (i.e. the score)? Also, is this general idea willing to adopt a city concept according to which all buildings with their singularities are able to encapsulate the fundamental traits of the general idea? Or, is this an old-fashioned city concept substituted by "consultations" (this is a singular denomination referring to an agreement among parts!) on the economic hypotheses and feasibilities of measures? Taking aside procedures, embracing an idea of city without relying on socio-political paradigms is not simply a formal condition achievable through a typological uniformity. Similarly, compositions in music not necessarily have to follow harmony as rule (an issue debated during the first decades of the last century). We believe that this is a "natural" condition (also today) related to the same rationale of "planning"; this does not have to lead to homologation or relying on nostalgia and the past as credit. A Schömberghian score is different from a Beethovenian one (as classic music would state) as well as the lack of tone derived from the classic tone has led to the twelve-tone technique, that is, to "decomposable" score. Arnold Schömberg stressed a concept present in both among classical tonal and expressionist a-tonal compositors that "in music there is no form with logic and no logic without unity…". Thus, the crucial point does not reside in the language or in the compositional structure, instead it is an issue rooted in the profound rationale of a certain "art", in the art of "doing usefully". Architecture as an art is not excluded. From this perspective the lack of a "score" does not exclude "performances" or "improvisations". Clearly, the lack of an orchestra does not exclude music per se, however a symphonic score without an orchestra cannot be put in place. As a result we can reach only the general tune and solo transcriptions (although well performed) will emphasize certain passages to the detriment of others.

The most well known ideal cities of the last century imagined by Le Corbusier and Hilberseimer, were thought almost in solo but involved collectivities (were they too ideological?). These ideal cities confront themselves with the given-present and build on contradictions for their being contemporary. Paris and Berlin were the "corpore vili" in the search proposition of innovations, also through dissonances. What about today?

Emilio Corsaro, Raffaele Mennella
Università di Camerino, Italy

Cities are again expanding by absorbing the urban empty spaces at the margins (again occupation-dissipation of the countryside) instead of “constructing on the constructed”, a process which would impose to know the “tonal” for proposing the “a-tonal” (in substance this implies working on variations around the same theme). The latter is a difficult operation that contradicts the current consumerist culture as it would impose to “use and re-use” and, perhaps, “saving”. What are the scenario we observe in the suburbs of metropolies of different scales? Closed social realities that do defer possible/necessary social integration to the future.

What is the scenario that would emerge from the “re-use”? A mix of old social presences and new ones, perhaps fresher. More importantly it would be possible to rely on architectural presences facilitating sense of belonging, pride and “recognizability” of the new “migrants” in the urban space: neighborhoods, quarter, districts, in one word the “heim” in the German cities. Paradigmatic examples of this can be found in many European capitals (Kreuzberg in Berlin, Belleville in Paris, Brick Lane in London, Esquilino in Rome, Bockenheim in Frankfurt). In these re-designed and modernized urban realities, Baremboim’s idea of “domesticity” is consistent with the intrinsic nature of the relational spaces. The measure of these spaces is proportionate. It is a measure of continuous reconfiguration as it is rooted in the ancient idea of sociability, beyond current costumes but also beyond the original configuration. A “public space” is such as a result of “human” not “racial” interactions and the co-presence of multiple sociabilities requires “temporary” variations around the spatial theme. The components in the orchestra will necessarily be “all different” and the performance of the score will change every time, however the sense and rational of the symphony will remain the same.

Images:

Image 1: L. Mies van der Rohe, L. Hilberseimer and A. Caldwell, La Fayette Park, Detroit, (original photo by Michael Russell from Wikipedia http://en.wikipedia.org/wiki/File:Lafayette_Pavillion_Apartment.jpg)

Image 2: Brick Lane, London (original photo by Emilio Corsaro)

From Alberti to the CIAM. In praise of a more humanist approach to the habitat

At the end of January 1954, six young members of the Dutch and English CIAM groups gathered in Doorn, in The Netherlands. In this meeting, the famous "Doorn Manifesto", was formulated, where these members of CIAM's younger generation delivered criticism on their "spiritual fathers", Le Corbusier, Gropius and Giedion. They were especially keen on highlighting the inadequacy of the Athens Charter's principles, arguing that "Urbanism considered and developed in the terms of the Charte d'Athene [sic] tends to produce 'towns' in which vital human associations are inadequately expressed." (1) They were explicitly against the idea of an assessment of the built environment through the lens of the four functions proposed in the Athens Charter, which didn't considered other "ecological fields" apart from towns. Thus, they argued in favour of considering every community, despite its size, as a "particular *total* complex", and the outcome of this novel methodological approach was the definition of the concept of "scales of association", inspired by Patrick Geddes' "Valley Section". (2)

One of this proposal's most striking consequences, was a deliberate shift from a universalist approach, the Athens Charter, into an one more concerned with specific "atmospheres", as Peter Smithson called them, which should be the basis for the creation of the Charte de l'Habitat. They were also critical on the separation of architecture and urban planning, which was embedded in CIAM's interwar discourse. "In the past of CIAM", Smithson argued, "[there was] too much dualism between house and city, without realising the interrelation" (AA.VV. 1954a NAi - TTEN7). Peter Smithson was, together with his future Team 10 fellow members, calling for a new understanding of the discipline, which should be supported by a new term: relationship. This position, we contend, resonates with Alberti's famous *dictum* "a house is like a small city and the city is like a big house", already suggested by Plato (3), and it brings about an important contribution for a paradigm shift in the assessment of and approach to the built environment in the 1950s.

In the early 1950s, the influence of Alberti's foundational text, De re aedificatoria, was fostered by the publication, in 1949, of Rudolf Wittkower's *Architectural Principles in the Age of Humanism*, which gained considerable attention by both professionals and dilettanti. The importance of Wittkower's reassessment of both Alberti's and Palladio's seminal contributions for the definition of architectural principles would, in fact, catch the attention of the younger generation. On a letter to the editor of the RIBA Journal published in February 1952, Alison and Peter Smithson argued that "Dr. Wittkower is regarded by the younger architects as the only art-historian working in England capable of describing and analysing buildings in spatial and plastic terms, and not in terms of derivations and dates". (Smithson et al., 1952)

The influence of Alberti on CIAM and Team 10
Some years later, in December 1954, in the text with the instructions to the national groups for the presentation at the 10th CIAM congress, the Organising Committee asked the groups to present their projects for an ideal human habitat, "recognising and exploiting the reality of their various situations." These projects should be presented according to the aforementioned scales of association, "City", "Town", "Village", and "Homestead", which were now also referred as "*symbols* for a much more complex series of relationship." (Team 10, 1954)

Both the idea of the scales of association, and the attention to the particular circumstance, cherished at this moment by the younger generation, resonate with a part of Alberti's De re aedificatoria, which, in fact, was overlooked by Wittkower. In his treatise, Alberti defines clearly "the elements of which the whole matter of building is composed": regio (the surroundings of the building), area (the building site), *partitio* (partition), **paries** (wall), *tectum* (roof), and *apertio* (opening). (4)

Moreover, Alberti's elements to systematize the disciplinary approach seem to be conspicuously subsumed by Le Corbusier and Pierre Jeanneret's *5 Points d'une Architecture Nouvelle*, originally published in 1927. (5) In its first publication in German, Le Corbusier argued that this "Architecture Nouvelle" was established against the architecture of the past, contending that "Il ne demeure ici plus rien des enseignements à la lettre des écoles", and that "Il ne rest plus rien de l'architecture ancienne." (6) Despite this confrontational approach, as far as we acknowledge, Le Corbusier never credited Alberti as source or reference against which his manifestos were written. However, with exception of Alberti's *regio*, Le Corbusier and Pierre Jeanneret's strictly followed Alberti's elements, in their own formulation of the *Points d'une Architecture Nouvelle*. (7)

The remaining building element defined by Alberti which was not considered in Le Corbusier's and Jeanneret's 5 Points, regio, appears later as the first clause of another important disciplinary manifesto, the Athens Charter. In this text we can observe, again, Le Corbusier shifting from Alberti's concept. In fact, for the latter, regio was both the building's surrounding atmosphere and the geographical aspects around the building site, whereas for the first, La Région was an "ensemble économique, social et politique." (8)
In the early 1950s, directly or indirectly, Le Corbusier and Alberti would eventually become again leading actors in the disciplinary debate. In fact, in his letter to the editor of the RIBA Journal, the Smithsons also report that
Dr. Giedion at a lecture at the I.C.A. earlier in the year stated that during 1950 at seminars both in Zurich and at the M.I.T. the most discussed books of the year were Le Modulor and The Architectural Principles of the Age of Humanism, both concerned with proportion. Dr. Wittkower was furthermore the only representative from this country invited to the recent International Congress on Proportion at Milan when mathematicians, artists and architects met to discuss this vital subject. (Smithson et al. 1952, p.140)

The Smithsons, thus, classified systems of proportion as a "vital subject". We would then suggest that Team 10's concept of Scales of Association, although inspired by Patrick Geddes' valley section, is also tributary of a concatenation of ideas supported by and critically assessed from Alberti's building elements and systems of proportion, together with Le Corbusier's *5 Points* and the Athens Charter. Furthermore, the stress on the idea of relationships, highlighted as one of the most important outcomes from the Doorn meeting, suggests a reconceptualization of the Athens Charter through the lens of Alberti's aforementioned *dictum* "a house is like a small city and the city is like a big house". This reconceptualization bears also a transition from a rational/intellectual humanism rooted in Classical antiquity, from Plato onwards, to a physical/perceptual one emerging in the aftermath of the Second World War.

The tension between these two different instances of humanism would eventually become epitomized in the participation of a peripheral CIAM faction, the Portuguese group. Hence, to illustrate the outcome of such a debate, we will further analyse their participation in post-war CIAM congresses, assessing it against a background of shifting methodologies in architectural education and the definition of the discipline itself.

The post-war debate on the habitat
The Portuguese CIAM group was formed by a relatively small number of architects, who were gathered around the figure of Alfredo Viana de Lima, a confess admirer of Le Corbusier, whose *Modulor* he used as reference to design his projects. Together with Viana de Lima, some young architects from Porto's architecture school were also engaged with the group and, among them, two would eventually become important contributors for the work presented in the CIAM congresses: Fernando Távora and Octávio Lixa Filgueiras. (9)

These young architects embodied the paradigm shift that the architectural education at Porto's architecture school was experiencing in the early 1950s. The leader of this process was the then director of the school, Carlos Ramos, whom had been, since 1940, encouraging the idea of "collective teaching" in the design studio chair (Ramos, 1935). Ramos, fostered the conflation of a classic humanist pedagogical approach with modern pedagogical methods. Thus, in his class both Vitruvius' treaty and Gropius' ideas converged.

On the one hand, Ramos uses the Vitruvian definition of the architect to stress the relation between theory and practice, as it is also highlighted in Alberti's prologue of the *De re aedificatoria*. (Alberti 1991, p.3) On the other hand, he fosters the idea of teamwork and learning by doing together with the interrelation between architecture, technology and the city, thus following Gropius' pedagogy.
The affiliation of Ramos with Gropius is revealed by his engagement in the translation of the latter's manifesto *Training the Architect*, a text written for his presentation in Harvard and, later with further dissemination in CIAM's Educational Committee in the period 1949-54 (Gropius, 1951). This text was envisioned as the base for a Charter of Education, whose guidelines were presented by Ernesto Rogers at the April 1950 Paris CIAM council meeting (Mumford 2000, p.202).

In his 1956 essay *Modern architecture* since the generation of the masters, Rogers himself associates Gropius with Alberti. He argues that
Gropius is the very conscience of the modern movement; he is our conscience; he is the creator of a method which overrides the a priori principles of traditional styles and enables us to understand things, to grasp problems and to give logic and harmony to their form and spirit. Gropius is the Leon Battista Alberti of our age; (Rogers 1956, p.VII)
Rogers' appraisal of Gropius pedagogical approach highlights the idea of continuity between Alberti's humanism and modernism's integration of Science and Man, a continuity that was also cherished by Carlos Ramos.

Ramos pedagogical proposal would eventually spread to the entire school, first with his appointment as the school's director in 1952, and with the contribution of new teaching assistants such as Fernando Távora (hired in 1950) and Octávio Lixa Filgueiras (hired in 1958), both Ramos's former students. This would foster the school as a collective space with a strong cultural activity cultivated by a new Research Centre for Architecture and Urbanism, which organized conferences, exhibitions and publications. This dynamic would foster both the school's teachers and students to participate in international events such as the CIAM congresses, UIA or S. Paulo's architecture biennale.
At this point, the education at the School of Porto was not only concerned with artistic or technical skills, but also with the development of a critical social conscience, supported on a solid theoretical formation. This conflation would, thus, influence the performance of the Portuguese group in the CIAM meetings and congresses, which would be epitomized in their contribution for the 10th CIAM congress.

According to CIAM's president, Josep Lluis Sert, the Dubrovnik congress should deliver an approach to the future structure of human habitat. (CIAM Porto 1956, p.14) To pursue that goal, from August 3 to 14, 1956, thirty-five "grilles" were presented and discussed in Dubrovnik. The Portuguese contribution was a project for an agricultural community, developed by Viana de Lima, Fernando Távora and Octávio Lixa Filgueiras, with the collaboration of Arnaldo Araújo and Carlos Carvalho Dias. (Figure 1) The project, titled *Habitat Rural. Nouvelle Communauté Agricole* was located on a rural area in the northeast of Portugal, which was being studied for the Survey on Portuguese Regional Architecture, by the team coordinated by Filgueiras. (10)

The project, delivered in Dubrovnik by Viana de Lima and Távora, was developed for a community of forty families, which was the average size of the region's neighbouring communities. These communities were also the reference for the project's urban layout, stretched along the two banks of a small river. According to the text sent to the congress, the Portuguese team argues that their project has "a very simple layout and structure, very natural, which allows easily to further extend the community, if necessary." (CIAM 1956, p.132)

The Portuguese group option to exhibit an agricultural community in CIAM 10, highlights their concern in presenting the scale of a rural village as another possibility of using modern movement's urban design principles. In fact, in the project's description, the group contends that their scheme can contribute for the 'Charte de l'Habitat', reaffirming "the importance of the Rural Habitat, which should not be overlooked by CIAM if they want their proposals to be really universal." That is, the group seems eager to demonstrate that CIAM principles cannot be only related with big cities and with metropolis, but also with those small communities forgotten by the heroic approach of CIAM's interwar generation.

Their project, in fact, reveals an attempt at reconciling both the interwar CIAM principles, and the new approach supported by Team 10. On the one hand, concerning the urban structure, their project is influenced by the idea of zoning, with housing, work, and leisure areas well defined, served by a circulation network, which articulates those sectors. On the other hand, they are critical about the modern idea of disciplinary autonomy, of the heroic role of the architect as author of a *Gesamtkunstwerk*. They argue that
the architect is no longer the dictator who imposes his own form, but the natural man, simple and humble, whom is devoted to solve the problems of their fellow men no to be served, but to serve them, thus building a work, perhaps anonymous, but in spite of that, intensely lived in. (CIAM 1956, p.132)

They tried to show this through the use of vernacular references in their project. In the layout of the housing unit, in the building technology they used and in the design of the volumes, the project showed a deliberate ambition to translate vernacular references into a modern language. Furthermore, they highlighted also the evolutional character of the project. According to the description of the "Grille", the floor plan of the dwellings "allows a great variety of types, adaptable to the growing size of the family, which could have themselves the initiative to develop the necessary works to adapt the house to their current needs."

The group suggested, moreover, that the future users should participate in the design process, claiming to be supporters of "an honest and permanent collaboration of all men in architecture and urban design projects, a collaboration which would entitle them to say my house, my village" (CIAM Porto, 1956).
The Portuguese group reveals their engagement with the adoption of a more humanist approach to housing and urban design, where variety is praised instead of uniformity, and the spontaneous is cherished instead of the ideal.

Towards a Welfare Humanism
We would suggest, thus, that Carlos Ramos conflated classic humanism and modern education provided Távora and Filgueiras the methodological skills to participate in CIAM's debate on a more humanist approach to the habitat, which resulted in the project discussed above. Further, Távora and Filgueiras would be also responsible to renovate architectural education towards a "new humanism". Távora will claim for an organization of the space at the scale of man (Távora 2004, p.14), whereas Filgueiras will support the architect's social responsibility, arguing that "the architect to be accomplished, must know how to do and, at the same time, know about things, man, the world and life." (Filgueiras 1985, p.16)

This approach is illustrated by the course taught by Filgueiras, *Analitycal Architecture*, where he has developed throughout the 1960s an assignment called "Urban Surveys". Supported by an analytical method that used drawings and pictures, the students researched on urban vernacular housing in the historical centre, mainly inhabited by poor people. (Figure 2) The goal of the assignment was to better understand the living standards of these communities in order to deliver a more comprehensive and critical intervention.

Filgueiras interest in this humanist approach would be portrayed in his 1962 text *Da Função Social do Arquitecto* (On the Architect's Social Function). In this text, Filgueiras frames his viewpoint on the architect's social responsibility with references from Alberti, Lúcio Costa, or Wittkower. He calls his approach the "marvellous anti-pencil" and, quoting Ernesto Rogers, claims that "the true architect is not an elegant elaborator of forms of varying taste, but rather a moralist whose task it is to deepen the content of life and to draw from it the symbols needed to give it form." (11)

Fernando Távora's and Octávio Lixa Filgueiras' humanism echoed the international debate that was held throughout the

1950s and early 1960s. In his 1962 book, Filgueiras discusses thoroughly Wittkower's *Architectural Principles*, highlighting the contribution of this book to understand a new scientific interpretation of Nature, brought about by the Renaissance artists. However, Filgueiras deems the Renaissance architectural principles as eclectic and regressive, bearing the "acculturation mark resultant of the incompatible connubial between two antagonist worlds, and especially the adoption of a vocabulary full of compromises with an already distant world." (Filgueiras 1985, pp.49–50)

This statement brings about Filgueira's critique of the Renaissance humanism, "that abstract cosmogony that does not penetrate into the people's understanding, which, by now, can only apprehend the mundane grandiosity of forms." He recognizes the importance of Alberti and his Renaissance counterparts in systematizing knowledge, but he argues that, now, the architect has to step down from an autonomous position to one more engaged with the real.

Hence, both the project presented by the Portuguese CIAM group in Dubrovnik, and their later pedagogic experiences illustrate an attempt to critically review Alberti's and the Renaissance humanism with a new, emergent "welfare" humanism, which acknowledges the importance of a platonic approach but is driven to foster a more socially engaged one.

Bibliography:

AA.VV., Notes from first meeting. In AA.VV., *Team 10 Meeting*, Doorn, 1954a

AA.VV., Statement on Habitat. In AA:VV. *Doorn Meeting*, Doorn, 1954b.

Alberti, L.B., *On the Art of Building in Ten Books*, Cambridge, Massachusetts: The MIT Press, 1991.

CIAM, *CIAM 10 Dubrovnik 1956*, 1956

CIAM Porto, *Group Porto, Portugal. Description de la grille*, 1956.

Filgueiras, O.L., *Da Função Social do Arquitecto* 2nd ed., Porto: FAUP Publicações, 1985.

Gold, J.R., Creating the Charter of Athens: CIAM and the Functional City, 1933-43. *The Town Planning Review*, 69(3), 1998, pp.225–247.

Gropius, W., *In search of better architectural education*. In S. Giedion, ed. *A decade of new architecture*. Zurich: Girsberger, 1951, pp. 41–46.

Krüger, M., *A Recepção Da Arte Edificatória*. In Da Arte Edificatória. Lisboa: Fundação Calouste Gulbenkian, 2011, pp. 75–129.

Lima, A. V. de, Távora, F. & Filgueiras, O. L., Tese ao X Congresso do CIAM. Arquitectura, (64), 1959, pp.21–28.

Mumford, E., T*he CIAM discourse on urbanism, 1928-1960*, Cambridge, Mass.: MIT Press, 2000.

Oechslin, W., *5 Points d'une Architecture nouvelle*. In J. Lucan, ed. *Le Corbusier, une encyclopédie*. Paris: Éditions du Centre Pompidou / Spadem, 1987, pp. 92–95.

Ramos, C., *Arquitectura. Algumas Palavras e o seu Verdadeiro Significado*. Sudoeste, (3), 1935, pp.36–37.

Rogers, E.N., *Modern Architecture Since the Generation of the Masters*. Casabella, (211), 1956, p.VII–VIII.

Sindicato Nacional dos Arquitectos, *Arquitectura Popular em Portugal* 4th ed., Lisboa: Centro Editor Livreiro da Ordem dos Arquitectos, 2004.

Smithson, A. & Smithson, P., Correspondence: "Architectural Principles in the Age of Humanism." *The Journal of the Royal Institute of British Architects*, 59(4), 1952, p.140.

Távora, F., *Da Organização do Espaço* 5th ed., Porto: FAUP Publicações, 2004.

Team 10, Draft Framework 5 - CIAM X - Instructions to Groups. In CIAM 10, 1954.

Welter, V.M., In-between space and society. On some British roots of Team 10's urban thought in the 1950s. In M. Risselada & D. van den Heuvel, eds. Team 10 1953-81. I*n search of a Utopia of the present*. Rotterdam: NAi Publishers, 2005, pp. 258–263.

Wittkower, R., *Architectural Principles in the Age of Humanism* 4th ed., London: Academy Editions, 1973.

Notes:

This work is part of the project "Digital Alberti" funded by Fundação para a Ciência e Tecnologia (FCT), COMPETE/FEDER, Portugal, and hosted by CES at the University of Coimbra (PTDC/AUR-AQI/108274/2008). The project is coordinated by Mário Krüger. Nelson Mota and Gonçalo Canto Moniz are researchers in the project, funded by FCT with PhD grant SFRH/BD/60298/2009.

1. Quotation from the manuscript of this document, kept in the Bakema Archive held by NAi, Rotterdam. See (AA.VV. 1954b NAi - BAKEg26).

2. For more information about the influence of Geddes on Team 10, see (Welter 2005)

3. See Plato's Leges, VI, 779b.

4. The latest translation of Alberti's De re aedificatoria into English suggests the translation of regio as locality and partitio as compartition, which we don't follow and, thus, we prefer to keep the original terms in Latin. See (Alberti 1991, p.8)

5. See, (Oechslin 1987)

6. These sentences would be rephrased in the 1929 publication, into a "softer" tone. See (Oechslin 1987, p.93)

7. Le Corbusier's pilotis are a substitution of Alberti's area; The plan libre is a response to partitio; Façade Libre challenges Alberti's concept of paries; Le Corbusier's idea of toits-jardins can be paralled with Alberti's tectum with a different approach, tough; and the fenêtre en longeur relates with apertio. For a more comprehensive development of this confrontation, see (Krüger 2011, pp.110–113)

8. For more information about the process that led to the publication of the Athens Charter, see (Gold 1998).

9. Alfredo Viana de Lima (1913-1991); Fernando Távora (1923-2005); Octávio Lixa Filgueiras (1922-1996). The group CIAM-Portugal was officially created in 1951, after Viana de Lima and Távora's participation in the CIAM VIII congress held in Hoddesdon, UK.

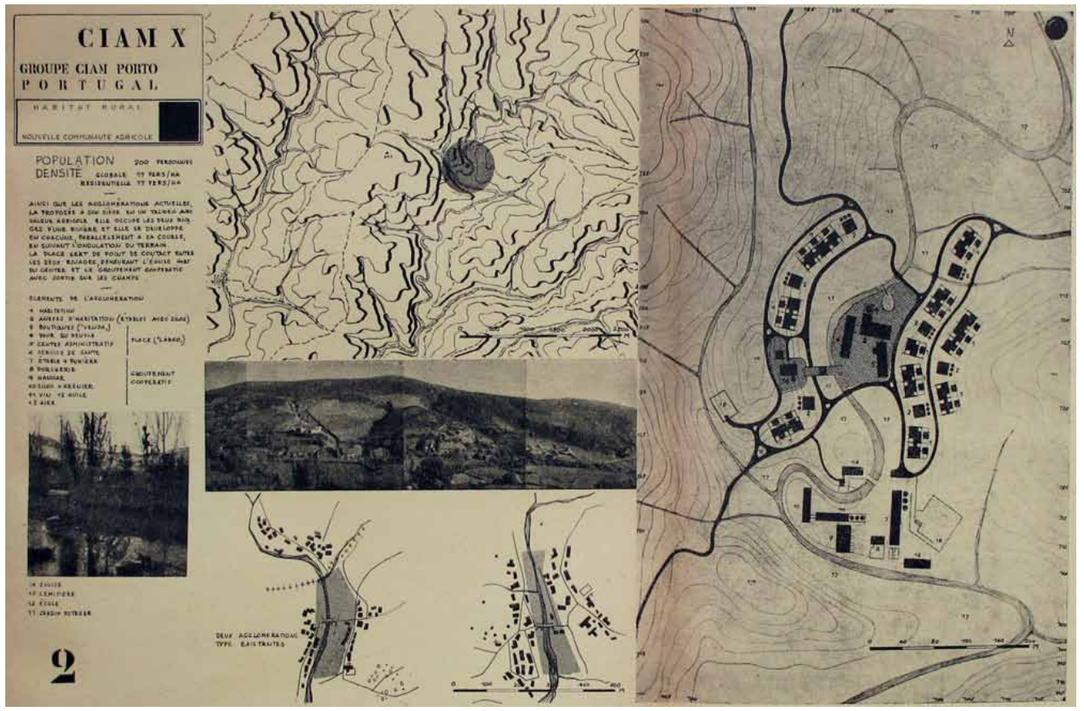
10. For more information about the Survey on Portuguese Regional Architecture, see (Sindicato Nacional dos Arquitectos 2004)

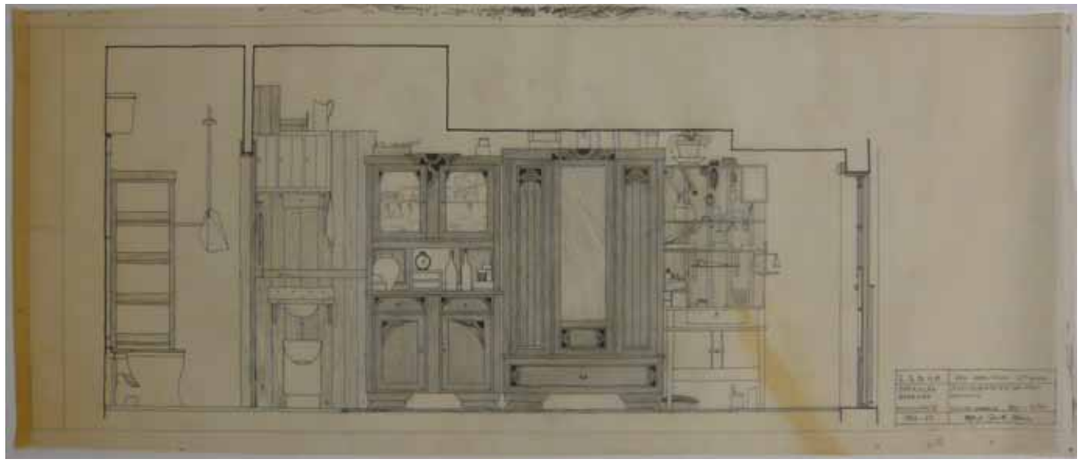
11. (Apud. Filgueiras 1985, p.96)

Legenda:

Figure 1. Group CIAM Porto - Portugal. "Habitat Rural" - Panel 2 of the project presented in the CIAM 10 Congress, 1956. Source: (Lima et al. 1959, p.26)

Figure 2. Jorge Canto Moniz - Barredo Operation - Quarter IV, Survey of a dwelling, Arquitectura Analítica, ESBAP, 1964-65. Source: Archive CDUA-FAUP.





Laura Anna Pezzetti
Politecnico di Milano, Italy

Picturesque Tools in the Idea of Modernity. Learning from John Soane

The “category” of the picturesque provides a possible comprehension of many elements which are at the origins of the idea of contemporary city. Asymmetrical devices, compositional procedures based on independent elements, rooms and parts, have also opened new horizons to the scale of architectural composition.
The word “composition” in itself, though often dismissed and rejected by contemporary architecture, does not actually coincide with the Beaux-Arts partis and the supremacy of geometrical hierarchy. Coeval to the picturesque, it originates in the 1700s anxiety when cities became an enormous “irregular pile of confusion and absurdity” where typology and axial geometry lost their power to confer order.
In the “ville comme une forêt”, predicted by Laugier, composite elements and free asymmetries that could not be included in academic procedures contributed to precociously define a composite “città per parti”, acknowledging chaos and irregularity as chief characters of the rising modern city: “qu’il y ait de l’ordre, et pourtant une sorte de confusion, que tout y soit en alignement, mais sans monotonie, et que d’une moltitude de paragulières, il en résulte en total une certaine idée d’irrgularité et de cahos qui sied si bien aux grandes villes”.
Underlining Choisy’s contribution to modernity, Banham (1960) stressed the role of principles referring to the picturesque. A “revenge of the picturesque” since - starting from Pevsner-, after the 40’s some protagonists of the Modern Movement such as Le Corbusier and Gropius were acknowledged to be influenced and concerned with the picturesque: “the Modern revolution of the early twentieth century and the picturesque revolution of a hundred years before had all their fundamentals in common”.
For some Anglo-Saxon authors, moreover, the opposition between symmetric/dissymmetric at the base of the picturesque was replaced by that between formal/informal. Yet an informal disposition -as pointed out by Watkin- does not mean without rules, since it may have rules of a more subtle kind, notably those of the picturesque.
Distinguishing picturesqueness from either beauty or sublimity, Uvedale Price in An Essay on the Picturesque (1794) defines five compositional principles: variety, movement, irregularity, intricacy and roughness. The principle of intricacy is also meant as a powerful source of grand and sublime effects through sensations like suspense and uncertainty.
The Intricacy in arranging landscape gardens, their variety of forms, lights and shadows, the movement provided by sudden and irregular deviations and partial concealments, transform the entire composition in a collection of multiple objects and spaces. Garden plans, such as in Burlington’s Chiswick House engraved in 1730 by John Rocque, reflect the inadequacy of the plan in describing the “sharawaggi” so that the plan is integrated by a sequence of different perspective tableaux set along multiple pathways.
Echoing Laugier’s “moltitude de parties régulières” and quite anticipating Le Corbusier’s stress on perception as opposed to the “illusion des plans”, Kames argues that “in large objects, which cannot otherwise be surveyed but in parts and by succession, regularity and uniformity would be useless properties, because they cannot be discovered by the eye”.
In Lecture VII presented at the Royal Academy, John Soane refers to the principles of gardens, openly reacting to Palladio’s “needless and studied uniformity, injurious to convenience and monotonous in effect”. According to Colin Rowe (1990), Soane’ Lectures were probably the first ones to introduce the “principles of composition” in the English language.
By analogy with the Chiswick’s garden plan, Soane’s montage of several perspective views of the Bank of England in composite plates substitutes the synthetic device of the plan with a dynamic vision of the various rooms as an ideal sequence of scenes. The proto-montage technique employed by Soane in many designs provides a relation between spaces that are not ruled by geometrical values, being based on the experience of inner space conceived in its poetic and narrative essence.
Just as in gardens, the sections, sketches and perspective views create a “story-board” of the planned tableaux. From then on movement and time are included in design, long before the 1900s.
In England, the contextual development of picturesque theories and Sensism promotes themes and procedures inflecting intricacy which, as in a narrative plot, allows to display in succession a great variety of scenes and a correct sequence of different emotional figures.
As the principle of classical unity is disarrayed, architecture cannot only seek in itself the raison d’être and it appeals to the “union of the arts”. The main issue of character, in kinship with the new theories of the picturesque and the aesthetics of sublime, fosters architecture to elaborate compositional theories by confronting with poetry, rhetoric and painting, with the theatre and its genres, expanding architectural registers beyond the limited expressiveness of classical orders.
Character represents the functional role of the building but it is not restricted to this. “Surtout les édifices publiques, devraient être en quelque façon des poèmes” writes Boullée. As Aldo Rossi wrote referring to him, character constitutes the narrative, evocative, emotional element of composition.
The search for expressiveness and architectural eloquence leads to changing the famous Horace sentence into ut architectura poesis, and architecture joins the other arts in considering the effect of the work on the individual. Being familiar with Horace and Longinus, Soane is interested in architectural eloquence and like in gardens, every figure, ornament or device is introduced in architecture according to its disposition to produce a given sensation.
In Le Camus de Mézière’s Génie de l’Architecture, much appreciated by Soane, character mostly concerns inner space: “chaque pièce doit avoir son caractère particulier. L’analogie, le rapport des proportions décident nos sensation; une pièce fait désirer l’autre”.
As the “the apparent disorder of the plan” of the Acropolis will be proved by Choisy and Le Corbusier to be highly structured upon picturesque principles, so we can interpret the artful confusion featuring some of Soane’s major works if we consider what the tableaux expressifs consist of: a variety of rooms based on the double principle of both assonance and variation.
The unity of the arrangement, i.e. the idea of building itself, is fragmented in an assemblage of rooms, each one intended as a basic spatial unit of the overall composition.
Since the room acquires an individual nature and is formally defined, it becomes autonomous from the configuration of the plan’s poché to emerge as a volumetric positive. With Soane’s architectural rooms the concept of inner space looses its vagueness to refer to the primary three-dimensional unit structuring composition.
As his harsh judgment on Piranesi’s Roman College shows, Soane was not inclined to mistake “confusion for intricacy” and “undefined lines and forms for classical variety”. He longed to compare himself with the classics, and classical sources for him were multiple but essentially archaeological.
In Soane’s Lectures the interpretation of the antique varietas seems to be imprinted with Price’s picturesque principles of intricacy, movement and contrast. The antique Roman bath and villas he sketched during his journey to Italy showed a multiform antiquity, typologically impure and even open-ended which allows him to work not only on independent flat geometrical figures but to combine single architectural rooms. Moreover, primary sources deprived of adornments appear to him as a figurative system at a pure state which the palimpsest of architectural language can draw from in order to regenerate.
In addition to character, the picturesque provides syntactic tools to compose an inner aporia between the individual nature of the rooms and the unity in variety of the arrangement.
The new compositional syntax which controls Soane’s works is not at the periphery of the classical but at the beginning of a different order.
The re-writing of classical variety finds an antecedent in Works in Architecture by the Adam brothers (1778) which anticipates the picturesque idea of movement associated with a variety of forms and with their effects on composition. Designs such the ones for Parliament House and Luton Hoo, display a multi directional and congested circuit of a number of differentiated rooms. Dance’s houses, such as Crambury Park, go even further as, according to Teyssot (1974) “one can perceive the whole only by walking through as in a labyrinth”.
Carrying to extremes the individual nature of the room, the Bank of England’s isolated sections, views and also models -one for all the Stock Office- show that each one of these spaces is virtually a building.
Although no single axis or enfilade allows us perceiving the order of the Bank of England as a whole, nevertheless the room is not actually a fragment as it does not allude to a lost integrity. Not even the assemblage is a mere collage of objecs trouvés since the intrinsic value of this space unit is not inferior to the relations frame it is merged into.
As with poems, in a large composition which cannot “be surveyed but in parts and by succession”, the various rooms are coordinated in different sub-systems which can be described as thematic units, as they are recognizable by their theme, typology, rhythms, identities and contrasts. Every unit is crossed by a penetration axis leading from the City to the depth of inner space. As these multiple axes are all orthogonal to different urban fronts, they command the rotation of each part in the overall lay-out.
Looking at them as a whole, these axes are not straight but neither erratic as they still are “radiuses” leading to the centre of the labyrinth, Bullion Court. Yet this centre does not determine any centralized hierarchic composition, nor a diagonal or radial one – still used in Ledoux’s pavillonsystem – as it only consists in a geometrical conjunction of the multi-centre assemblage of the parts.
Rooms departs from these principal axes as inner interconnected spaces, chained by meandering circuits which privilege, instead, a succession of scenes along pre-established diagonal views.
Angulated views follow a rhetorical strategy to open up unexpected sights and variations to enhance the pathos of the composition. The viewer’s eye is tilted upwards and reveals the “spherical ceiling” as the basic element of spatial punctuation and as a character tool through the “lumière mystérieuse”: although it is repeated as a keynote, continuously produces novel effects by variating its application.
As a first consequence picturesque and character tools imply a supersession of the Cartesian notion of space, which is defined by mere geometrical coordinates, and favour instead the role of perception.
Through the succession of unexpected views, based on assonance and variety, architectural rooms suggest an “interior landscape” where angulations of the observation point and lighting conditions influence the perception of space and figures. As architecture appeals to the senses, space is experienced as a path of discovery along the assemblage of rooms, the narrative character of which prevails on any axial arrangement of the “poché”.
The selection of spaces-tableaux and their connection procedures provided by character, “which governs the whole and all its parts”, become the invisible rules of new compositions.
The series of the Bank’s two point perspectives strengthens the dynamic, peripatetic space effect where a unique privileged observation point is absent. The space of the single room is now part of a whole that is no longer included in its framing.
As a second consequence, the plan ceases to be the key design tool, having been turned into an open system of multiple relationships. Subsequently coordinated framings, intended to stir a variety of sensations, prevail over a unifying whole.
In the Bank design, which developed over 45 years according to an in itinere programme, Soane experiments a strategy which is nearly a paradox, thus utterly modern, as unity is made of individual parts and parts must be perceived as a unity.
A third consequence stems from the relationship between the completeness of the room form and the open order of composition, being it extendible in time and space.
As result, the overcrowded assemblage replaces the façade with a screen wall conceived as an independent enclosure. As Le Corbusier would say, the inner formal exuberance is finally hidden behind an “enveloppe pure”, “une masque de simplicité”.
The poetic-narrative procedures of the Bank assemblage enable him to include in the work also the accidental element, in regards to its time deferment, its pre-existing layout or its overflowing the original block. The achievement is destined to have a vast repercussion on the urban space as well, since the “irregular pile of confusion and absurdity” of Gwynn’s contemporary London anticipates the notion of labyrinth that will connote modern space from Nietsche to Vidler, deprived of centre and expanding indefinitely.
Laugier’s city already claimed “qu’il y ait de l’ordre, et pourtant une sorte de confusion…et que d’une moltitude de parties régulières il en résulte en total une certaine idée d’irrégularité et de cahos qui sied si bien aux grandes villes”.
The juxtaposed designs by Soane and Dance for the City of London show that the picturesque, when transferred to city, provides a strategy to govern a new kind of urban structures, open-ended, composite and open to variations.
Soane regrets that Wren’s great plan and Gwynn improvements had not been implemented. Nor does he approve of the modest scale of “square by square” empirical policy. But as Gwynn’s improvements already show, the proto-capitalist eighteenth century city cannot be controlled by typological means.
The ambition of a grand urban scheme emerges since the first phase of Soane’s Bank extension towards Lothbury Road (1794-1800), by establishing an explicit relationship between its design and the improvement around the Bank from the Monument to Finsbury Square. Strengthening Gwynn’s idea, the proposed two green residential circuses focus a big scale urban design on the Bank northern gateway. Its new western axis connects northwards Mansion House with Dance the Elder’s Finsbury Square (1777), first development of the upper Moorfields. Southward, two new urban axes intercept the “triangulation” formed by the Bank, the Royal Exchange and Mansion House and connect it with Monument, i.e. with the port on the river Thames where Dance has submitted designs for new monumental Legal Quays and scenic Twin Bridges.
The design is composite and made of independent parts but there is no search for fortuitism as it translates by new means a structural scheme first foreseen by Wren and later assumed by Gwynn, creating a North-South urban sequence from the City’s expansion area as far as London Bridge. A strategic sequence actually, being focused on the three major public buildings expressing the City’s economical power and Dance’s schemes aiming at re-launching the urban harbour.
Soane’s second and last phase of the Bank extension overflowing from the original block (1800-1808) is again carried through in connection with a second version of the Finsbury Circus’ development between the Royal Exchange and Finsbury Square, designed by Dance for the Corporation of London (1802). The two old friends unite their designs with the mutual purpose of straightening Princes Street in order to guarantee both urban design and Soane’s envisaged new Bank enclosure. With the support of the Committee for improving the City Estate they aim at overcoming the opposition of one landowner, “for the mutual advantage of the Bank, the City and the Public”. The improvement also explains the outstanding Tivoli Corner of Bank and foresees again the connection of the City’s public and financial core with the river Thames.
The possibility offered by “artful confusion” supplants Baroque perspective order allowing them to transform the chaos connoting the early modern urban condition into a composite city integrating urban fragments, landscape and infrastructure.
Likewise, in Soane’s design for ceremonial Westminster buildings are not amalgamated in a geometric arrangement, but they stand out as a succession of single episodes along a narrative but spatially uneven urban path. The city is conceived as a set of significant places, expressing the civil magnificence of a longed-for neoclassical Westminster.
Autonomous but still clear forms defy the idea of baroque unity to face the chaos of the arising modern city, approaching the principle of natural variety.
The independence of elements, movement and time entered into architectural design long before the 1900s, when the assemblages of Pompeii and Villa Adriana again provides inspiration for the mind, emphasizing inner space volumes and sequences as the base of architectural sensation, déplacement, spatial closure and figure-ground reversal. Like Soane, many modern architects are interested in the “origins”. The destiny of modernity seems to be radical, to go back to architectural roots.
Learning from the “apparent disorder” of the Acropolis plan, according to Le Corbusier asymmetries are a mean to display “tableaux” with “the ability of a great director”, making picturesque a group of architectures by analysing the processional aspect and the resonance with the landscape.
Diverging from contemporary Moholy Nagy’s “vision in motion”, the architectural promenade is not a synonymous for simultaneity as composition is still “une suite d’événements visuels, comme une symphonie est une suite d’événements sonores. Le temps, la durée, la succession, la continuité sont les facteurs constituants l’architecture, -ce qui annulle et condamne “les plans en étoile”” .
The primacy of montage implies subsequent tableaux to be perceived along a pathway or a ramp as modernity adds to the oblique movement of the picturesque, the vertical déplacement provided by the ramp, the new privileged tool for dynamic visions.
With the possibility of the “free plan” the aggregative system relates firstly to a picturesque composition of extrovert independent “organs” – each being still “un entier” and not fragments – and then also to single “elastic forms” the richness of which, as in Ville Savoy, has to be contained in the enclosure of a “mask of simplicity”.
When Kahn in Rome rediscovers closure, the aggregative tool is brought back again to independent introverted rooms. The character of the room is again an architectural lieu and the base unit of the composition. The volumetric positive of rooms defines the plan according to their associative procedures and the façade is experimented again as a mask.
While these two examples – though not exhaustive or fully developed here – show that picturesque tools prefigured by Soane

are operating in the idea of modern architecture, the city of modernity as stated by Rowe (1978) becomes instead a "congeries of conspicuously disparate objects".
In the ville nouvelle organs break down promoting an object-based strategy, a triumph of Cartesian geometry that definitively prevails over space and its "suite d'événements". Though the inclusion of nature originally responds to the picturesque aesthetics, the open-city is reduced to a neutral carpet dominated by planning, on which free-standing buildings are placed independently and can migrate from site to site.
Yet, Le Corbusier's plan for St. Dié already contains the dilemma of the free standing object, being "the space occupier attempting to act as a space definer".
Kahn develops this possibility which modern city has not followed. Fort Wayne's design shows originally free elements brought back to a circuit around a public court, in order to combine independent "organs" with significant urban space. Kahn's city is an architectural place whereby spaces –street itself– can be considered as open-air rooms interacting with solids. Assemblage, character and memory have a connective role between distinct or distant elements.
After the Townscape culture of the "accident" (highly interesting in theory but quite deceptive as far as results) and cultivated architectural assemblages - like those of Stirling - keeping "estranged" elements together despite their heterogeneity, the contemporary city has turned the homogeneity of the modern Cartesian grid into a collision field for all-singular objects, infrastructures and natural fringes.
Continuous interiors and blurring spaces encapsulate city's complexity inside monoliths (i.e. T. Ito); campus set-up residential settlements equally allow the connecting space device of Breda Chassé Park or the unjustifiable vacuity of Milano-Bovisa (O.M.A).
"The garden as a criticism of the city" (Rowe), with its rich peripatetic experience, has not received sufficient attention yet, except for legitimating gratuitous informal disorder and self-referred spectacular objects.
On the contrary, the comprehension of the historically long experienced picturesque tools could help to operate in the centrifugal, scattered variety of the contemporary city. Soane's adoption of picturesque tools suggests that architecture is a discourse made of a set of words joined together by rules that can be broken by poetic license or reinvented but that however are always significant.
Referring to a more complex interaction between space/object, void/solid, perception/order, picturesque tools may foster a richer urban experience and architectural dwelling dimension.

Selected Bibliography

Abalos I. *Atlas pintoresco vol.1: el observatorio and vol.2: los viajes*, Barcelona: Editorial Gustavo Gili (2005-2008)
Abramson D. *Building the Bank of England. Money, Architecture, Society*, 1694-1942, Yale University (2005)
Acres W. M. *The Bank of England from Within 1694-1900*, 2 vols., London (1931): Oxford University Press
Architectural Review, n.115, April 1954
Banham R. *Architettura della prima età della macchina*, Bologna: Calderini,1970
Banham R. "*Revenge of the Picturesque: English Architectural Polemics, 1945-1965*" in Summerson J. (ed.) *Concerning Architecture*, London: Penguin Press (1968)
Bolton A. T. *The Works of Sir John Soane*, London: Sir John Soane Museum (1924)
Bolton A. T. *A short Account of the Evolution of the Tivoli Corner of The Bank of England*, London: Sir John Soane's Museum(1933)
Boullée E.-L. *Architecture, essai sur l'art, now in Rossi A.* (ed.) (1790 ca.), *Architettura: saggio sull'arte*. Etienne-Louis Boullé, Padova: 3rd edn, Marsilio, 1981
Calvano T. *Viaggio nel pittoresco: il giardino inglese tra arte e natura*, Roma: Donzelli (1996)
Le Camus de Mézière *Le Génie de l'Architecture ou l'analogie de cet art avec nos sensations (1780)*, Geneve: Minkoff reprint, 1972
Choisy A. *Histoire de l'architecture* (1899), Geneve- Paris: Slatkine reprints, 1983
Cozens A. *Compositions of Landscape*, London: Dixwell (1785)
Du Prey, P. de la Ruffinière, John Soane: *The Making of an Architect*, Chicago-London: University of Chicago Press (1982)
Gilpin W. *Three essays: on picturesque beauty; on picturesque travel; and on sketching landscape: to which is added a poem on landscape painting* (1794), Westmead: Gregg international, 1982
Gwynn J. *London and Westminster Improved* (1766), Westmead: Gregg International Publishers, 1969
Home H. (Lord Kames) *Elements of Criticism* (1762), Edinburgh: Bell-Bradfute, 1817
Hall S. *Parallax Architettura e percezione* (2000), Milano: Postmedia Books 2004
Lang S. "Richard Payne Knight and the Idea of Modernity" (1968) in Summerson J. (ed.) *Concerning Architecture: essays on architectural writers and writing presented to Nikolaus Pevsner*, London: the Penguin Press
Laugier M.A. *Essai sur l'Architecture* (1753), now in Ugo.V (eds.) Marc-Antoine Laugier. *Saggio sull'architettura*, Palermo: Aesthetica, 1987
Leeds W.H. "An Essay on the Architectural Character of the Bank of England" in Britton J., Pugin A. (eds.) *Illustrations of the Public Buildings of London*, 2 vols, London: J. Taylor (1825-28)
Milani R. *Il Pittoresco l'evoluzione del Gusto tra classico e romantico*, Bari: Laterza (1996)
Mosser M., Teyssot G. *L'architettura dei giardini d'Occidente*, Milano: Electa (1990)
Parametro, n.264-265, *Sul Pittoresco*, luglio-ottobre 2006
Pevsner N. **The Englishness of English Art**, Londra: Penguin Books (1964)
Pezzetti L.A. *Stanze architettoniche. La Bank of England di John Soane*, Doctoral Thesis, Venice: IUAV (2005)
Pezzetti L.A. "Stanze architettoniche. La Bank of England di John Soane" in Mantese E. (ed.) *Carattere, narrazione, variazione*, Venezia: Marsilio (2008)
Pezzetti L.A. "I disegni delle Banking Hall di John Soane."Visual poetry" e visione archeologica" in Il Disegno di Architettura, n.37 sept. (2010)
Pezzetti L.A. *Da Moorfields al Tamigi dopo il Great Fire: i cardini fondativi delle trasformazioni urbane tra il 1666 e il 1833*, V Congress of the European Association of Urban History (AISU), Rome (2011)
Posocco P., "Comporre per elementi. I criteri di organizzazione degli elementi nello spazio" in Lambertucci F., Meriggi M., Pallini C., Pezzetti L., Posocco P. *Cinque interventi sulla composizione architettonica,* Milano: Lampi di Stampa (2010)
Price U. Essay on the Picturesque (1794), London: J. Mawman (1810)
Richardson M., Stevens M.A. (eds.) *John Soane Architect: Master of Space and Ligh*, London: Royal Academy Publications (1999)
Rasmussen E.S. *London the Unique City,* Cambridge, Mass: MIT press (1982)
Rooksby S.H., Yerbury F.R. *An Architectural History of the Bank of England*, London: Ernest Benn Limited (1930)
Rowe C., Koettler F. Collage City, Cambridge: The MIT Press (1978)
Rowe C. "Carattere e Composizione, o di alcune vicissitudini del linguaggio architettonico del XIX secolo" (1974) in *La matematica della villa ideale e altri scritti*, Bologna: Zanichelli, 1990
Sawyer S. "Sir John Soane's Symbolic Westminister: The Apotheosis of George IV" in Architectural History n. 39 (1996)
Schumann-Bacia E. *John Soane and The Bank of England* (1989), London: Longman, 1991
Stillman D. *English Neo-classical Architecture*, 2 vols., London: A. Zwemmer (1988)
Stroud D. *George Dance, Architect 1741-1825*, London: Faber & Faber (1971)
Stroud D. *Sir John Soane Architect*, Boston, London: Faber & Faber (1984)
Summerson J. *Sir John Soane 1753-1837*, London: Academy Editions (1952)
Summerson J. *Architecture in Britain 1530-1830* (1953), Yale University Press, 9th edn 1989
Summerson J. *Georgian London* (1970), London: rev. ed., Barrie & Jenkins, 1988
Summerson J. *The Evolution of Soane's Bank Stock Office in the Bank of England* in "Architectural History", Vol.27 (1984)
Soane J. Improvement in London and Westminister, London (1827)
Soane J. *Memoirs of a Professional Life of an Architect between the years 1768 and 1835 written by himself*, London: privately printed (1835)
Soane J. "The Royal Academy Lectures" now in Watkin D. (eds.), Sir John Soane. Enlightenment Thought and the Royal Academy Lectures, Cambridge: Cambridge University Press, 1996
Szambien W. *Symétrie Goût Caractère: theorie et terminologie de l'architecture a` l'age classique 1550-1800*, Paris : Picard (1986)
Tafuri M., "*Per una critica della ideologia architettonica*", in Contropiano, 1, 1969
Teyssot G. *Città e utopia nell'illuminismo inglese: George Dance il giovane,* Roma: Officina (1974)
Turco L. *Dal sistema al senso comune. Studi sul newtonismo e gli illuministi britannici*, Bologna: Il Mulino (1974)
Watkin D. *The English Vision. The Picturescque in Architecture*, Landscape & Garden Design, London: John Murray (1982)

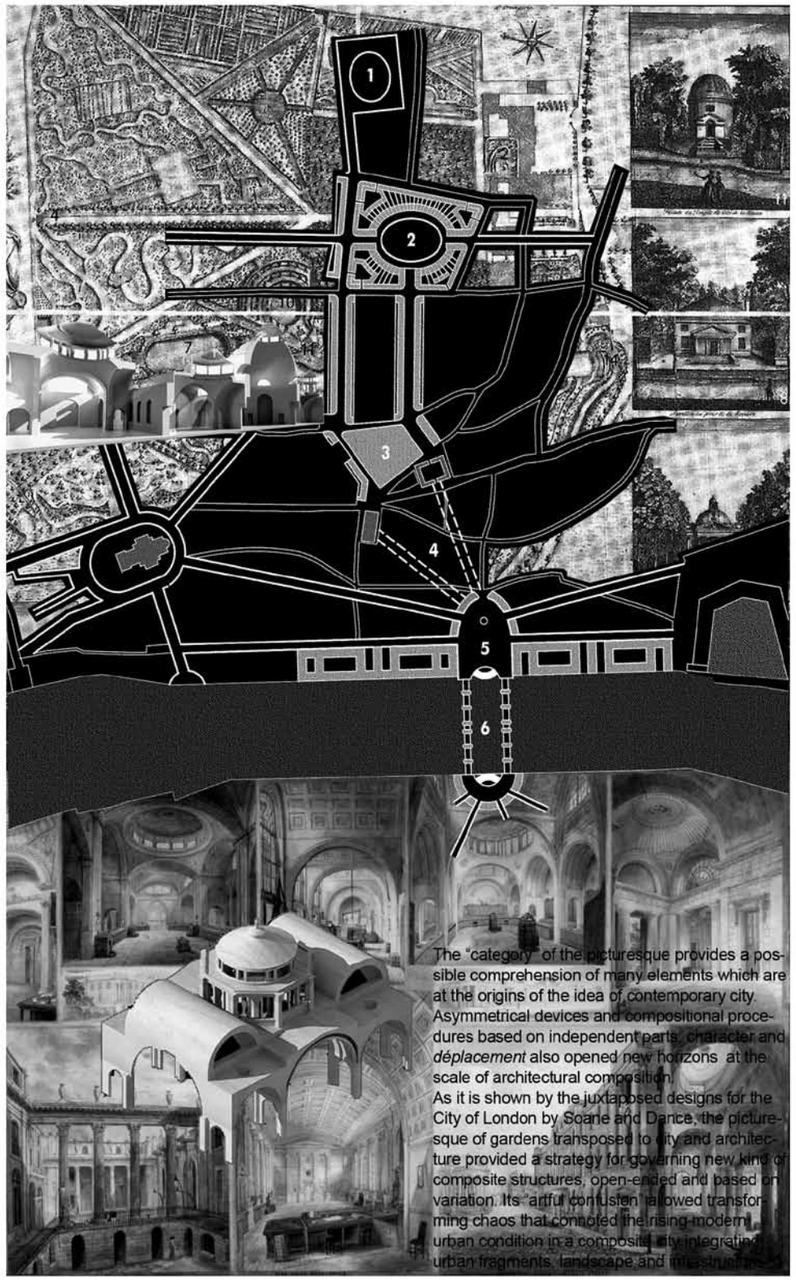


Image Legenda

Montage plate inserting: W. Kent and Lord Burlington's Chiswick House and garden, engraved in 1730 by John Rocque; Author's reconstruction of the composite design from Moorfields to river Thames: 1 G. Dance the Elder, Finsbury Square (1777), 2 G. Dance, London Amphitheatre, later known as Finsbury Circus (1802), 3 J. Soane, the Bank of England, 4 New southern axes belonging to the first improvement around the Bank from Monument to Finsbury Square (1800), 5 G. Dance, area around Monument and New Legal Quays as revisited in W. Daniell bird's eye view (1802) 6 G. Dance, Twin Bridges, 1800; Author's study models of the Bank of England: section through Banking Halls; Old Dividend Office.

Maxim Poleschuk
Russia

Concept - Ecological City

In any modern discourse on urbanism, we see - environmental issues are becoming increasingly diverse and global. However, the transition to a reality, there are options. The presented concept, anyway, for all the current trends, but the main difference - offers a different structure, a different combination of ingredients, different character of the priorities that creates a completely new quality. The most significant - the accumulation of environmental trends creates an objective basis for the explosive growth and the real transformation of the city for the foreseeable future.

Today, the world culture in a situation where only the ecological status of the world are organizing principle, and capable of creating a new politics, economics and culture. New ideological trends do not appear old or become extremist or marginal (actually how you can relate to communist doctrine, in fact, capitalist China). No other global and general cultural trend is not observed or they are in their infancy in fact the majority of contemporary issues - globalism, religious and nationalist not tolerate the absence of new positive philosophical and ideological ideas, etc. aggravate the situation, do not offer positive programs. Therefore, green architecture, the concept of sustainable development against the backdrop of deteriorating ecological reality, the situation is becoming more and more relevant. None of the publication, blog, political events do not go without equivocation or a statement of environmental problems. In some areas - the development of electric vehicles is called the explosive growth in the other - environmental products, slow diffusion, in the third - the political processes (Kyoto agreement) in the fourth, the rapid development of energy saving, but in some - Green House slow development, and in the formation of the concept ecological city - only formed approaches. What is it - the aggregate of all other environmental aspects of traditional + - transport, public spaces, + another architecture, or is it some kind of a new quality. On this subject a study, it is not meant to be analytical depth, it is in keeping with the architectural traditions embodied in the architectural utopias and futuristic projects, distant and near past, however, is deployed in the context of real urban situations and can hypothetically be realized in a particular scale.

Modern architecture began with the demonization of the "horrors of the capitalist city," a draft of an ideal city, and Voisin Plan for Paris Le Corbusier, discussions, and urbanists dezurbanistov "ideal villages" for the workers, etc. Nowadays, competition for the development of Paris sets a new round of searches. After 90 years of continuing the plan version Voisin (kontsenptsii using a high-rise buildings). But even with the best location on the conservation of landscapes, despite the fact that at this time, there is also awareness of the real crisis of the concept suburbii in large metropolitan areas.

A few words about the terminology - Green house, green architecture, green design, green city (but it's the latter, some of the 20-30s project Ladovsky, Green city near Nizhny Novgorod, and many others, that's actually a specific relationship with dezurbanizmom) . Or ecological house, Environmental Architecture, Environmental a city? Actually a collision with a "green city", in my opinion, helps to get out of this situation - "Environmental" is broader and meaningful, "Green" - already seyuminutney more prevalent in the West or the Soviet distant wound. There is Ecotech, Organitek, Degitalnaya architecture - but they do not fully describe the situation more kontsentriruyuyas on a quest of some forms of plastic. In my opinion Ecotech, Organitek closer to the description of buildings and complexes, and the "ecological" is closer to such complex entities as a city on this and become as the terminology is still very plastic and flexible and only time will judge which one is more accurately reflects and describes a complex phenomenon of transition from the functionalist and technocratic, post-modern, hi-tech modernist architecture to the ecstatic merging of natural and environmental determinism.
As is well known in many countries announced the establishment of eco-city but in all these cities for Eco more energy, with enough traditional planning and architectural solutions. PlanIT Valley in Portugal quarter of Vauban (Vauban) in Freiburg, Germany, the area of Eco-Viikki (Eco-Viikki) as a new campus and research center for biotechnology Technological University in the suburb of Helsinki, the quarter of 99 townhouses located in the suburbs Hakbridzh (Hackbridge) south of of London. A more ambitious - Masdar near Abu Dhabi, but China's most ambitious environmental project in the vicinity of Shanghai airport. C a certain degree of conditionality to this series can be attributed Skolkovo near Moscow. All of these neighborhoods and the city basically continues the tradition of the twentieth century town planning is not aimed at finding a new structure.

The formation of ecological outlook as the basis for transformation of domain-spatial environment of the city

General idea of the concept of the Ecological City - organic, structural qualities of the connection of suburban and urban life in a fundamentally new structure of the natural built environment. But this is not a new version of the "garden city". It is a city that tends to naturally preserving natural forms and structure of urbanization in developing all advantages as a place of civilized society seeks to merge seamlessly with the natural environment. Time of artificial and natural resistance of nature goes, begins the process of convergence.

Wednesday of the city, created in this way - it's not the architecture "without architecture" as a dogma, there is "Ecotech", "organitek" and "degitalnaya" architecture to create a "mega-ecostructure" as a neutral convenient, economical, environmentally friendly, technically perfect, socially oriented, and therefore aesthetically purposive human environment and society

Basis of the concept

- The concept of harmony with nature "city garden" Howard Morris (1) - Wright's organic architecture (2), the concept of dezurbanizma 20s, the concept of "bionic architecture," "ecotech" experiences "snapshot" of major cultural events, mobile settlements;
- The idea of separation of vehicles and pedestrians, the formation of complex combinations of public and private transport (the concept of pedestrian zones, the concept of "NRE" and etc.);
- Pedestrian environment in the historic town founded in the last 40 years;
- The concept of low-rise (sredneetazhnoy, "low-density") of urban development;
- The concept of a diffuse organization of the city (not solid residential and industrial. Area) and between focal lesions with preservation of the environment (the concept of Morris, Howard A. Grumba project within the framework of the "big Paris", the area Haverlyay in Holland, prorekt "Ekolstra" and etc.).
- Interaction of the organic medium of new technologies with the social community territorial structure;
- The concept of "home theater" (as the concept of total transformation and technologizing) + the concept of "smart home" technology as an application YTI to the management and functioning of the living environment;
- Environment of innovation as the basis for the formation of a new innovation space - silicic Valley, Academic Campus, Bangalore, and so on. (But not resulted in all these cases to a fundamentally new spatial environment - a phenomenon which requires a special study or illustration of the relative independence of the socio-economic environment on the spatial environment);
- Centuries-old tradition of utopian social and spatial search for the ideal of the "Golden Age", "City of the Sun", "Island of Utopia," "Falangstery", "House of the commune," "City of the Future" as a stable cultural and artistic symbol of harmony, "happy life" (" There is a city with transparent gold ... but in the city in the garden, all the birds so the flowers, where the animals walk unseen beauty ..... "Grebenshchikov)

The main controversy, resolved in the concept of the Ecological City

- To overcome the opposition of the city, houses, streets, and production - the creation of an integrated urban environment is not separating, but uniting - Environmental megaprostranstvo
- Housing, city environment should harmoniously combine the natural and the artificial nature, the city turns into a natural and artificial landscape
("City village", "ecological city", "city - landscape" actually sustained the historical trend, is not fully realized and remains a kind of ideal);
- Complete separation of the transport-engineering structures and the pedestrian, recreational, urban, outdoor, recreational environment;
- The economic model of the existence of all spheres of life with the algorithm spread over the surrounding area;
- Attachment to high-speed rail and highways, and agglomerations, programs, economic development and expansion because it is unlikely to be large cities, and at 50-100-200 thousand people create a social and cultural potential of even a millionth of an artificial way is impossible, in fact it is the urban education related to existing centers, in this for a modern version of the concept of "satellite towns" transformed into a more complex system;
- The possibility of transformation without changing the engineering and transport infrastructure (structural framework for a long time and transformable content and does not put forward the idea of being implemented);
- Use of existing energy-saving technologies (solar panels, the secondary heating vent streams, wind, full of closed recycling, heat pumps, new materials, etc.);
- Socio-economic foundation must be innovative creative activity in all fields - science, business, culture, education, politics - the union of the concept of industrial park, new models of education, venture capital, innovation zones, formal models of cultural innovation, the concept of a new remeslenichestva ("New design "), etc.;
- A possible model of social environmental proud of - the concept of Russia 2 Dmitry Badrovskogo and many similar ideas. Where the local formation of new urban development of the active population to the new institutional content (police, courts, local government, school, etc.) and then spread to other areas. In this way the concept is the formation of Skolkovo, but it demonstrates the state's attitude to architecture in other important social and cultural projects (Sochi, Russian Island) is the most "modern architecture" really embodied in the images of yesterday and the secondary structure and with a certain pathos glamorous five-star hotels (apparently it is the aesthetic ideal of the modern architecture of the ruling elite in Russia,);
- The formation of a new aesthetic ideal based on the humanization of social relations and the state itself.

The concept of the Ecological City

This kind of specific projects and program - activity-concept in the framework of global trends and research program. Unlike many of these ideas is that its basic ideas were publicly announced in 1986 (medal at the World Biennale of Architecture), and not only lost their relevance in 24 years, but it is the original version of the ecological city (as a new city or a fundamentally new nature - Urban Education and as an evolutionary transformation of the traditional city and Territorial Development of the system, and as a new transportation infrastructure and how to suggestions for possible experimental realization of the territories).

- No solid urban environment interspersed with parks, gardens and recreational areas, and natural and recreational environment with interspersed over urbanized environment of space, approaching the structure of the natural landscape. An analogue of the natural environment and situated a short distance (1-2 km) (in size and density) of medieval towns, for example, this idea is implemented in the project Hoverlyay in Holland). Or closely spaced "village" and "farm" turned into a small urbanized enclaves - the "city-village." Individual elements of the Environmental Education for 3 - 5-10 thousand people with full pedestrian accessibility within the formation of which is formed by the city lobular structure (50 - 100-200-300 ..... 500 ... thousand. The total separation of the urban transport and pedestrian environment. City - Wednesday walking and cycling (roll .....) movement. car and public transport goes into ekoprostranstv, inside artificial structures (a close idea of "ekofreymov" Richard Rogers (5) and many other projects).
- Residential, public business, the environment of the road, street thoroughfare - merged into a single structure - a man-made landscape - the city is not out of the boxes, streets and parks - and the "hills", "forest", "fields", "River", "valleys" - inside which is placed all that is foreign to nature (streets, roads, offices, manufacturing, engineering infrastructure, etc.) in the outer shell, which is approaching the image of man-made landscape.
- Inside or near or in conjunction with the artificial landscape is the quintessence of the modern city - Wednesday structurally closest pedestrian zone historic cities - a symbol, tire, vestige, psychologically necessary connection with the last element, the symbol of humane urban environment - the image of some "social ravines" (pedestrian zone) cutting through the natural environment.
- These natural and urban education can occur in two ways, through the development of new territories in existing agglomerations or rapid transit lines, or gradually transforming the environment of existing cities, where a dying industrial environment or buildings 60-80 years is gradually being replaced by new formations and partly replaced by the recreated natural environment (the concept of permanent reconstruction of the urban environment M.Poleschuk, Yu.Ryabyh 1987).
- The main social basis of the new city - the formation of enclaves in the new social-activity-relationships of people. Perhaps, an analog of the medieval halls with super social integrity becomes an analogue for the more democratized social formations associated with professional, amateur, cultural, social classes and communities based on the emerging cultural movement, amateur sport, healthy lifestyles, amateur and professional art, professional clubs, and other social communities but not religious, not nationalistic or extremist is not political - (example - the movement of such traffic "occupying Wall Street," society "Blue buckets," the defenders of "Khimki Forest," Nicholas lenivitskomu Polissky movement, social movement of the Art Ark ecotourism, historical re-enactment clubs, Arhnadzor, ecovillage, bikers, surfers, beer lovers, Pushkin, Humane Society, Alcoholics Anonymous and other as a social basis for the formation of civil society (to create conditions for collaboration and communication between people in the local areas). Further, based on this primary social community may naturally form social movements, civil society and possibly new network of political dvieny.
- Unique conditions for the realization of these ideas in a limited area of the island ("Island of Utopia" as a historic symbol of a stable analogues, and others) - as a continuation of the global trend, the proposed local materialization of the concept of the Island Sands Grebnevskie at the confluence of the Volga and the Oka River in the center of Nizhny Novgorod (Project " Ostrov.21 Century "), as a new center for social and urban development activities of the city, as an example of a new Russian city planning, humanizes the interaction of people, authorities, developers, investors
- As part of the Samara-Tolyatinskoy agglomeration at the confluence of the Volga River and the largest urban r.Sok proposed the formation of the inclusion of reclaimed quarry.
- To meet the challenges of the Moscow metropolitan area is developed by the project in Istra, Moscow Region. With the transformation of the environment and the suburban housing estates, the remnants of the historic villages (Anosino, Pokrovskoye) townships Nakhabino, Pavlovsky settlement, with full preservation of forests. By combining these areas with modern public transport, cycling and the creation of enclaves based on the concept of ecological development of the modern city with job opportunities, training centers, parks, cultural centers, recreational centers sozdaetsya Wednesday Ecological City by 150 thousand (7) (author . N.Chuchalina, A.Aliyev K.Tarasov, P.Arnautova, I.Harlamova project manager. M.N.Poleschuk).

In essence, the concept of the Ecological states and justifies the idea of creating a new structure on the basis of energy saving technologies for environmental philosophy, public transport, find a new structure of social organization and new organization structure of residential areas and their integration into urban education space "dissolved" in natural formations.

1. William Morris, News from Nowhere, Elijah era of peace, 1962.
2. Wright F.L., The future of architecture, 1960.
3. Le Corbusier, The City of Tomorrow, London, 1929.
4. James Wines, Green Architecture, Taschen, 2008.
6. Poleschuk M.N., The concept of ecological city, in "Green Project 2010"
7. Project Ekolstra, "Green Project 2011" by M. page 120. 121.
8. Ohitovich M., The problem of the city. «SA» ń 4.1929. s.133.134.
9. Ladovsky N., Moscow historical and socialist. Construction Moskvy.1930. a. 17-20

Patricia Ribault, Sara Lubtchansky, Patrick Nadeau
l'Ecole Supérieure d'Art et de Design de Reims, France

Plants: a model for design?

Plant plasticity, mutation and adaptability: qualities open to interpretation

Introduction

The teaching of plant design is unique to ESAD [*Ecole Supérieure d'Art et de Design – Higher College of Art and Design*] in Reims and has no equivalent at the level of higher arts education in France or abroad. At the crossroads between the arts, design and architecture, the notions of "design" and "plants" are traditionally associated with art, but have not yet been explored as a theoretical and practical couple in their own right; doing so therefore opens up extremely rich fields of study for researchers in contemporary arts and techniques, whether studying at a university or an art college.

We intend to develop an open, ambitious, multi-disciplinary and innovative research project to forge closer links with the other disciplines taught in the second cycle at ESAD in Reims (art, spatial and object design, graphics/multimedia). Plant design, practised since 1997 and taught at ESAD since 2008 by registered architect and designer Patrick Nadeau, has already proven its scientific and artistic potential, encouraging us to follow the same path.

Our ambition is to lay the foundations for reflection and production within the framework of a new field of design, by relating it to plants. We believe that this relationship contains key questions for our society with regard to nature, and that it is symptomatic of contemporary anthropological transformations. We will focus on modes of plant development and adaptation, which are remarkable for their incredible diversity and ingenuity, in order to create new models and methodologies in art and design capable of finding innovative solutions to the economic, ecological and societal problems with which we are confronted. It is thus a question of appropriating strategies specific to the plant *kingdom* – or rather to the plant kingdoms – and seeking to transfer them to or interpret them from the positions, methods and production processes of the designer. In order to do so, we need to situate the problematics of plants in both the urban space and the domestic space, focussing our research on the evolution of our relationship with plants and, more generally, with nature, in line with the recent changes which have affected not just urban and suburban landscapes, but also the very notion of landscape. Indeed, the contemporary relationship to mobility and motricity is prompting a redefinition of the perception of space, whether natural or artificial, internal or external, and of its components.

The growing city/country overlap is the starting point of our research. Indeed, we are witnessing an increasing integration of nature into the city, leading to the disappearance of urban/rural dualities, and occurring at all levels: town planning, architecture and objects. The designer thus positions himself at the level of objects and plants, envisaged as a subject on a human scale (as opposed to the level of the architect and landscape designer, who position themselves at the level of buildings and landscapes, or the town planner, at the level of cities and regions). In this context, the role of the designer is therefore to bring form to the growing organicity of the environment and render it habitable, drawing on research in agro-materials, botanics, organic farming and new technologies.

In a general manner, this project enables us to define a new field and new subjects for research in design, by linking the practical implementation specific to design with the theoretical and multidisciplinary research specific to the humanities. We are therefore developing both "fundamental" research involving open and non-instrumentalised experimentation, and applied research along "R&D" lines in association with industry. Our reflections are notably inspired by the works of Rem Koolhaas on urban space[1], Bernard Stiegler on concepts of mobility and motricity, and the doctoral research programme "Forms of urbanism" ["*Les formes de l'urbanité*"] developed between 2006 and 2009 by Pierre-Damien Huyghe in the Theoretical and Applied Aesthetics Laboratory [*Laboratoire Esthétique Théorique et Appliquée*][2].

Finally, this project is distinguished by its twin dimension of teaching and research: on one side, the teacher-researchers at ESAD involved in this project will produce objects and/or texts on the subject, and on the other, practical and theory-based teaching at Master's and post-graduate level will be based around the research areas developed here.

This research project involves a partnership with the Faculty of Arts at Picardie Jules Verne University, in collaboration with Serge Bismuth, senior lecturer in aesthetics, who since 2010 has taught a second-year Masters seminar on the topic of plants[3], in collaboration with ESAD. This is part of the "Artistic interactions" offshoot of the Art Research Centre (*Centre de Recherches en Arts - CRA*) project, directed by Hervé Joubert-Laurencin. Other research laboratories are also involved in the project: the HTTP laboratory (Histories, Techniques, Technologies and Patrimony – EA 3716) at Cnam, to which we are already linked by a research agreement (historical and technical perspectives); the Sciences Po Euro-American campus based in Reims (economic, political and sociological issues); and the Landscape LabEX at the National Landscape College [*Ecole Nationale du Paysage*] in Versailles.

Plant design

By Patrick Nadeau, designer and registered architect, lecturer at ESAD in Reims

"*Man's relationship with nature is currently undergoing profound transformations. Man is becoming a predominantly urban creature, and cities are expanding ever further. On some continents, in Latin America and Asia in particular, the traditional balance between city and nature has already been toppled by the development of megalopolises absorbing entire stretches of countryside, whether wild or cultivated. The notion of the city or of architecture as somehow separate from nature is vanishing with the emergence of an inhabited continuum integrating nature and artifice. Also vanishing is the image of man as independent from his natural environment, now being replaced by that of man considered to be a natural phenomenon among others.*

This increasing overlap between city and nature is a source of passionate interest to architects and landscape designers, as illustrated by numerous contemporary projects. For example, when Jean Nouvel proposed, as his competition entry for the Temporary Guggenheim Museum of Art in Tokyo, a structure entirely covered in plants, transforming the building into a mountain, he broke down the traditional limits of architecture and reinterpreted the city/nature relationship. Many artists interested in issues of space are also concerned with this question. Rejecting the principle of duality on which modern architecture has been based (the inner against the outer, the artificial against the natural, form against formlessness, the visible against the invisible, and so on) they are working on the multiple and mutual dependences surrounding humans, the built environment and nature. The installations of plastic artists Gerda Steiner & Jörg Lenzlinger or the semi-real, semi-fictitious architecture of architect and artist Philippe Rahm are, for example, representative of this way of thinking.

It is also interesting and important to observe that, in parallel to this research on space, current research on new technologies and new materials also very often incorporates living matter. Agro-materials for architecture or materials originating in biotechnologies for industry are undergoing spectacular developments and becoming ever more efficient.

Plant design is to be seen in this context. It is concerned with issues related to the introduction of living matter into the built environment (and the scale of objects and everyday spaces). It envisages plants as a subject on a human scale and seeks to introduce the conditions required for cooperation. Plants are thus regarded as potential architectural materials, components in objects or models for design… There are numerous issues at stake in the projects, but concerns related to the sensory and subjective qualities of space (visual, tactile, olfactory, etc.) are fundamental. The initiative is fed by current research in various disciplinary fields, notably in biology, which after years of exploring the animal kingdom is now discovering the incredible sophistication of the plant kingdom (the work of Francis Hallé is an excellent example).

Integrating plants into objects or architecture challenges environmental disciplines from fresh, unexpected and cross-disciplinary perspectives, thus giving rise to typological, temporal, plastic, usage, technical, ecological and ethical issues. Such interrogations, leading to personal interpretations and the deployment of different types of media (objects, installations, stage design, interior design, even architecture) are what give plant design its appeal.

The different approaches to plant design:

Typological
Conceiving spaces or objects which make use of plants naturally leads into areas contiguous with those of architecture or design, such as gardens and landscapes. The interest of such projects lies precisely in the ambiguity of their status (architecture? design? garden? landscape?) and the potential for formal, plastic or structural research which this ambiguity favours.
Temporal
Plants are theoretically eternal, whereas objects are temporary (their obsolescence is even very often built-in). Plants sprout, germinate, expand. The stability of an object incorporating plants is sacrificed in favour of its organicity. Proliferation and parasitic behaviour condition its evolution, provoking alterations, modifications, transformations… The question is once again posed of the status of such objects.
Plastic
Seeing plants as a material to be integrated into habitable spaces invites us to reconsider their plastic and formal qualities from an architectural perspective (colour, transparency, density, texture, reaction to light, to sound, etc.) This involves a dialogue between botanical language and plastic language.
Usage
Integrating plants into everyday living spaces (domestic quarters, workplaces, commercial premises, etc.) means confronting them with the principles or concepts specific to contemporary architecture such as flexibility, modularity and "transformability", concepts which are all quite remote from the world of gardens with which they are traditionally associated, and which essentially function around values of sustainability, stability or durability.
Technical
The development of soil-free cultivation techniques (essentially related to intensive plant production) enables ever more refined and ever closer overlapping between plants and built spaces. Harnessing these techniques represents an interesting project which invites us to consider the aesthetics they are likely to produce.
Ecological
Collaborating with plant specialists challenges many of the received ideas on the ecological virtues of plants more often based on marketing than on scientific criteria. A better understanding of them enables us, for example, to think of them less as "service providers" responsible for cleaning or decontaminating our environment and instead to concern ourselves with their sensory and subjective qualities which so enrich our contemporary lifestyle.
Qualitative
Plants can today be regarded as a product, given that their scientific conception and their industrial mode of production raise questions of a qualitative, aesthetic, ecological and human nature which cannot fail to interest the designer."

Research objective

This research aims to expand the fields of design in its relationship to plants, both at artistic and scientific level. We wish to study plant plasticity, the influence of plants on their environment and of the environment on plants, as well as their adaptability, particularly in an urban setting, in order to define a new field of research in design applied to plants. In other words, we wish to discover what the operating procedures of the plant kingdom can bring, in terms of approach, to art and design.

Our inquiries therefore centre on the following: How can plastic artists and designers appropriate the modes of development, resistance and adaptation of plants, in accordance with their own methods and productions? How, then, can plants be employed as a model for design? Each of the four themes which follow is open to interpretation, and all are avenues worthy of exploration. We are working with botanists, engineers, landscape designers, artists, philosophers, sociologists, economists, architects and designers, some of whom participated in the study day held on this topic on 22 November 2011 - Maris Denis (artist), Jean-Christophe Bailly (writer), Gilles Galopin (botanist), Patrick Blanc (botanist), Gilles Belley (designer) and the CoLoCO collective (landscape designers) – and others who will be taking part in the International Art and Design Conference [*Rencontres Internationales de l'Art et du Design*] in November 2012 devoted to this question.

Methodology

The project is developed around four distinct and independent research areas:

1-Research on forms: observation and classification
For our starting point, we adopt the methods of botanists (observation, naming and classification of plants – climbing and aquatic plants, epiphytes, parasites, mosses, etc.) leading to a form of classification specific to the designer. It is a question of discovering how plants adapt to their natural environment, and developing curiosity and understanding in relation to plant matter. We are working with botanists including Francis Hallé, Patrick Blanc, Liliana Motta, Eric Joly and Frédéric Pautz to help us identify the plant characteristics which will enable the designer to establish the classification criteria relevant to this field. We are also working with writers such as Jean-Christophe Bailly, who is concerned with living forms, teaches at the Landscape College [*Ecole du Paysage*] in Blois, and has expressed interest in contributing to this topic.

We are bringing a scientific insight to this "designer's herbarium" through the study of plants from a botanical and natural sciences perspective on the one hand, and from a plastic and aesthetic perspective on the other. The medium privileged here is design in its etymological sense, as the basis for a project, connected to writing or photographic imagery, towards multimedia developments enhancing the aesthetics of classification.

2-Plasticity: mutations, adaptations
If we consider design as essentially concerned with modes of man's adaptation to his environment, the plasticity of plants becomes all the more pertinent to our project. The speed of evolutions in urban forms suggests links between mutation capacity in plants and potential design development models.

We will focus our attention on the study of genetic or spontaneous mutations in plants, their adaptability to the environment and to attacks (predators, pesticides, pollution, construction), their ability to recreate their own form in reaction to events. Emphasis is placed on studying formal strategies in all their complexity, on the transformations and evolutions of these living beings, which, unlike animals and humans, are rooted to the ground, and consequently must develop different adaptation techniques. We are seeking to discover the manner in which plant-environment/environment-plant exchanges take place, and how they adapt to any type of situation. We will be working with artists, landscape designers, architects and designers including Michel Blazy, Giuseppe Penone, Steiner and Lantzlinger, Marie Denis, François Bélanger, Nils Udo, Andy Goldsworthy, Philippe le Goff, the Le Balto workshop and the COAL collective.

In parallel to this study of plant plasticity, we will be engaging with the humanities to examine the issue of plants in the societal environment. How have societies evolved towards an ever more distant relationship with nature? How have we adapted as a species to the urban environments in which 3.4 billion people now live, more than half of the global population? What propositions and solutions can design bring to this situation, which is unprecedented in the history of humanity? How can we devise a viable environment in which plants can cohabit with the artificial? Must we turn to models of "reverse growth"? We have established contacts with historians (Didier Bouillon from the HTTP laboratory, CRA, Certu: André Guillerme, Serge Bismuth, Emmanuel Boutefeu), sociologists (Sciences Po, URCA, Ladyss: Bruno Latour, Julian Mishi, Angélique Rochier) and ethnologists such as Philippe Descola.

On the question of introduction of living matter into the artificial environment, research is both theoretical and practical: the production of texts or recordings (interviews) of historical, sociological, philosophical and anthropological analyses, and creation of videos, documentaries, performances, works of choreography, installations, etc.

3-Appropriation
We are seeking here to redefine the boundaries and connections between plants and the everyday environment (furniture and objects), to establish new typologies of objects as well as hybrid spaces. We assess usages and attempt to establish new relationships between the natural environment and the artificial environment, the idea being to use plants as architectural materials for living space, or as a model for the creation of new objects.

We will focus on the innovation processes developed by the plant kingdom, whether transposable into design or simply serving as sources of inspiration. We may, for example, take inspiration from biomimicry or bioluminescence and orient our research on the basis of Janine M. Benyus's book Innovation Inspired by Nature, or the studies of light-producing plants by Welsh artist Cerith Wyn Evans. We are working with artists, designers, architects and landscape designers including Nicolas Soulier, Guerric Péré, François Roche, Philippe Rahm, Mathieu Lehanneur, Gilles Belley, Gilles Clément, Junya Ishigami and Tokujin Yoshioka. At theory level, we are inviting contributions from philosophers, psychoanalysts, writers, poets and art historians, who provide a literary, artistic and aesthetic perspective, such as Gilles Tiberghien, Michel Racine, Catherine Chomarat-Ruiz, E. White and B. Gatersleben, Raphaël Bessis, Clare Cooper Marcus, Roger S. Ulrich and Anne Cauquelin, among others.

The media involved are from the fields of design, interior design and the plastic arts.

4-Prospective: towards a sensory environment
This concerns the production, presentation and finalisation of the work resulting from the three research areas, in the form of an exhibition and publication project, as well as through an open and prospective approach. The best practical and theoretical work will be selected with a view to publication of a book on plant design, together with, in particular, the Art Research Centre [*Centre de Recherche en Art*] of Picardie Jules Verne University. The scientific and teaching team brought together for this research project will coordinate events related to it, and we will thus be able to present a review of the research in progress through an exhibition at the 2013 'Reims Scènes d'Europe' festival, on the theme of the earth.

A book will be produced, jointly published with the UPJV Art Research Centre [Centre de Recherches en Arts] in Amiens, and an exhibition will be organised as part of the 2013 Reims Scènes d'Europe festival on the theme of the earth.

Schedule

This research project extends over two years (2011-2013). At teaching level, the first three research areas are offered in 2011-2012, as chosen, to first-year Master's students supervised by Patrick Nadeau. A study and exchange day was held in autumn 2011 in Reims. Academic year 2012-2013 will see expansion and finalisation of the research (fourth stage) through a number of DNSEP courses which who will take this theme as their subject. An international conference will provide a bridge between these two research aspects in autumn 2012.

Scientific Committee: Patrick Nadeau, plant designer, Sara Lubtchansky, town planner; Patricia Ribault, doctor of arts and art sciences, Claire Peillod, Director of ESAD in Reims, Serge Bismuth, senior lecturer in aesthetics, UPJV Amiens, Didier Bouillon, research associate at the HTTP laboratory at Cnam, Manola Antonioli and Alain Milon, philosophers from Versailles National Landscape College [Ecole Nationale du Paysage]. In parallel, the teacher-researchers from the scientific team will also be working independently on these questions.

Notes

[1] Koolhaas, R., *Junkspace. Repenser radicalement l'espace urbain*, Paris, Payot, 2011

[2] Pierre-Damien Huyghe is professor of the philosophy of arts and techniques at Université de Paris I Panthéon-Sorbonne, and has developed the research strand *Forms of urbanism [Les formes de l'urbanité]* at the Theoretical and Applied Aesthetics Laboratory *[Laboratoire Esthétique Théorique et Appliquée - LETA]*.

[3] "*This seminar examines what underlies the notion of plants, as well as what, via certain materials and some of their special usages, arises from aspects of this notion likely to be of interest in the areas of values and artistic creation*" Serge Bismuth 2010.

Pierfrancesco Sacerdoti
Politecnico di Milano, Italy

Urban renewal in the late nineteenth century. The case of via Dante in Milan

Via Dante is one of the first new streets created in the old city of Milan and an important example of late 19th century urban architecture, both thanks to the adoption of rules that aimed at a homogeneous result and to the quality of its buildings, designed by important Milanese architects of the period.
The study aims at reconstructing the context and history of the street, and at stressing the reasons for the architectural quality of Via Dante, considering that it might provide ideas for planning new urban developments.
In order to understand the historical context of the Via Dante project it is useful to consider two aspects. First of all, the influence of Second Empire Parisian urban planning, and secondly the circulation of architecture handbooks and anthologies.

The most typical aspect of Haussmann's urban planning was the destruction of parts of the historic urban fabric in order to open new streets and avenues.
The insertion of these streets into the existing urban structure gave each street a different character and meaning depending on the area it was in, triggering transformation processes that went beyond the boundaries of the intervention[1].
One of the main consequences of Haussmann's trasformations was the increase in value of the building sites, which concerned property not only along the new streets but also in the surrounding neighbourhoods.
In the global Parisian transformation a continuity relationship with baroque urban planning is recognizable, for example in the use of new and existing monuments as backdrops for the new avenues[2].
The building regulations became very important, because of their role as instruments of control on the "public" part (hygienic and esthetic aspects) of the apartment buildings, on which the city's new appearance largely depended.
Paris was also the birthplace of the apartment building, which made its first appearance in the 18th century[3], before becoming widespead in most european cities. It was an "integrated" building type, with various stories associated with different functions. An important role was also played by the new technical installations: aqueduct, sewage, gas, and later electricity.
Typical features of the Parisian apartment house are the mezzanine, related to the presence of large shops and warehouses on the lower stories, and the attention to the architectural treatment of corners, which took over the role of articulations between different urban spaces, fostered by the frequency of building lots with acute angles.

In the European and Italian architectural culture of the time, the role of architectural anthologies and handbooks became very important, reflecting the development and the dichotomy of academic and polytechnic cultures, typical of the second half of the 19th century.
The anthologies of examples promoted the spread of Renaissance architectural language and compositional schemes. Among these publications two of the most important were Paul Letarouilly's *Édifices de Rome Moderne* (1840 and 1857), which became a reference for architects in Europe[4], and, in Italy, *Fabbriche moderne inventate da Carlo Promis ad uso delli studenti di architettura...* (1871), edited by Giovanni Castellazzi, which contained a collection of projects for bourgeois apartment buildings inspired by the typology and style of Italian Renaissance mansions[5].
The technical and critical publications for building also increased during the second half of the 19th century. The handbooks published in Italy were addressed to a new public, made up of students and professionals who studied in the technical schools and in the recently founded polytechnic schools.
The most significant architecture handbooks for the Milanese architectural scene were Antonio Cantalupi's *Istruzioni pratiche elementari sull'arte di costruire le fabbriche civili* (1862), Archimede Sacchi's *Le abitazioni* (1878) and Carlo Formenti's *La pratica del fabbricare* (1893)[6]. The latter actually diplays examples directly inspired by the buildings along Via Dante and shares the same idea of urban architecture, closely connected with the ideas of technical suitability and of quality workmanship.

One of the major reasons for interest in Via Dante is the significant role it took on in the structure of Milan, as an extension of the axis of Corso Sempione and as a link between two of the city's most important monuments: the Cathedral and the Sforza Castle. m
These monuments share the characteristics of large size, symbolic value and placement at a different angle from the orientation of the Milanese urban fabric[7]. Over time various projects were elaborated to integrate the Castle with the city, but the esplicit intention of connecting the Cathedral and the Castle became relevant only around 1880 .
The projects which dealt with the issue with the most clarity and which anticipated the definitive arrangement were those by Leonardo (especially the second, drawn around 1513), by Giovanni Antonio Antolini (*Foro Bonaparte*, 1801), by the members of the *Commissione d'Ornato* (the so-called "Piano dei Rettifili", 1807), by the Fondiaria Company (1880-1885) and by Cesare Beruto (1884-1889).
The last series of projects for the Castle area began with the 1880 Fondiaria Company project and continued with an uninterrupted series of proposals, which included the alternative projects and the subsequent versions of the Fondiaria project, ending with the project carried out, designed by Cesare Beruto.
The main criterion adopted by all these projects, starting from the Fondiaria project, is that of the maximum utilization of the land, as revealed by the elements the projects have in common: the massive presence of residential blocks, the street connecting the Castle with the centre and the absence of new public buildings.

Via Dante was built according to a detailed urban plan featured in the Beruto City Plan (1884-1889).
Before the approval process of the street, the so-called "Pirelli Commission"[9], created in 1885 to evaluate the Beruto Plan's first draft, set the essential elements of Via Dante: a 20 metre width (typical of other streets built in Milan at the time) and the nearly symmetrical head-buildings towards the Castle. Also the idea of the *Capitoli Speciali* (special building regulation), that was applied to Via Dante, Foro Bonaparte and Piazza Cordusio, had already been programmed by the Commission.
Expropriation for public use in Via Dante was justified by the pretext of hygienic clearance, which also became social clearance, causing the expulsion of the working class[10].
The presentation of the projects for the buildings and their construction both began in 1887.
The land along the street was sold to a private company, Cassa Sovvenzioni ai Costruttori, which demolished the preexisting buildings and decided the lot subdivisions; the lots were sold to private citizens who then built the buildings under the control of the Municipality's building commission[11]. Is it worth noticing that the procedure employed by the Milan Municipality was very close to the concession system used in Paris during the Second Empire[12].
Many buildings along Via Dante were planned by the most important Milanese architects of the time: Luigi Broggi, Giuseppe Pirovano, Romeo Bottelli, Giovanni Giachi, Antonio Tagliaferri and Luigi Conconi.
In January 1888 the Mayor presented a "Proposal for the appointment of prizes to be granted for the best buildings that will rise in the new districts"[13]. Three cash prizes were to be given to the owners of the best buildings built along Via Dante and Piazza Cordusio. The proposal, which had the objective of encouraging architectural quality in the city, was accepted.
The first prize was awarded to the building designed by Giuseppe Pirovano, on the corner of via Giulini, the second prize to the building planned by Giovanni Battista Casati, Giuseppe Magni and Antonio Tagliaferri at no. 16, and the third prize to the building designed by Antonio Citterio at no.15.
The definitive name of the street was chosen in 1891[14]. The choice of Dante Alighieri, a personality who does not belong to Milanese history, reveales the intention of giving the reformed city a national flavour.
The vicissitudes of Via Dante ended with the discussion about its backdrop and with the decision to rebuild the so-called "Torre del Filarete", according to Luca Beltrami's project, since the Castle's existing naked wall seemed inappropriate for the monumental character of the new street[15].

Together with Piazza Cordusio, Foro Bonaparte and Parco Sempione, Via Dante forms the most succesful sequence of urban spaces in 19th century Milan.

The operations of Via Dante and Foro Bonaparte were planned and managed by the rich local bourgeoisie, that invested its capitals in property speculation and at the same time modified the historic centre so it could house its dwellings and work activities.
The park and the exedra around the Arco della Pace assume, with respect to the approved project, a weaker bond with the other three parts, both because of the presence of the Castle, that separates the park from the city centre, and because of the decision not to build the residential blocks on both sides of the park. The most unified part of the global urban plan is thus the one between Piazza Cordusio and Foro Bonaparte.
The four main spaces of the sequence – Piazza Cordusio, Via Dante, Foro Bonaparte, Piazza Castello – each have a different and well defined character. They all share the fact of having been built over a short time (about ten years) and the unity of the whole, in which a balance between general rules and the individuality of each building was pursued.
The elements that form the system are representative of late 19th century urban planning, in the wake of other European experiences such as those of Paris, Vienna, Berlin and Budapest[16]: the square as convergent point of streets (Piazza Cordusio), the street obtained by demolition (Via Dante), the exedra (Foro Bonaparte); these elements connect and highlight the existing monumental buildings, like the Castle and the Arco della Pace[17].
This sequence of urban spaces reveals 19th century Milan functional and social topography by means of the sequence of building types, from the centre to the periphery: the financial buildings at Cordusio, the residential-commercial buildings along Via Dante, the buildings with theatres in Via Beltrami, the high-class apartment buildings around the Castle, the villas overlooking the park, the middle-class houses around Arco della Pace[18].
The costructions along Via Dante and Foro Bonaparte followed the instructions of period handbooks as far as the rapport between building lots and urban blocks and the arrangement of the building blocks is concerned[19].
The internal arrangement of the buildings was aimed at the objective of maximum profit, fulfilled through a delicate balance between maximum land occupation, the requirements of the market (reasonably sized courtyards, apartments possibly facing the street and high ceilings for the richer apartments) and the instructions of the building regulations[20].
The principles followed for the occupation of the lots and the arrangement of the rooms in the apartments that can be observed in Via Dante and in Foro Bonaparte are characteristic of the bourgeois residential buildings which developed in the main European cities during the second half of the 19th century, for example those in Paris and in Berlin[21].
The architectural continuity that characterizes the Cordusio-Dante-Foro system depends, perhaps more than on the repetition of building types, on the use of similar schemes for the composition of the facades and on the common reference to Italian Renaissance mansions.
An important unifying feature is the two-storey base, which can be seen in all the Piazza Cordusio and Via Dante buildings and also in many Foro Bonaparte ones. The base functions both as compositional element for the facades and as flexible "container" of different functions, which depend on the buildings' urban position.

One of the most interesting aspects of Via Dante is its overall unity despite the differences between the façades. It is the theme of *chorality*, which refers to a harmonic rapport between different buildings. Each building expresses a different architectural conception, reflecting the culture of its author.
Chorality may be considered as the capacity for combining general rules and individual expression, which is a topical issue of urban planning, and can be considered as *dialogue between buildings*.
One of the crucial factors that led to this general effect was the adoption of the *Capitoli speciali*.
This regulation mainly concerned two issues: that of the courtyards, considered as technical spaces to assure the healthiness of the dwellings, and that of the facades. The latter is the object of almost half of the regulation items[22], proof of the importance facades had in late 19th century urban architecture and of the role taken over by residential buildings as primary elements for defining the character of urban space. Both these aspects reveal the importance of the concept of "urban decorum", inherited from the rich Milanese neoclassical urban culture.

According to the *Capitoli speciali*, the quality of the street depended on three elements: even facade height, use of durable building material and regularly-shaped roofs.
The rapport with the city (and with the 19th idea of the city) was assured by two significant paragraphs: the first one regarded the harmonic relationship between the head-buildings, and the second prescribed architectural unity on all sides of each building[23], which meant that the unity of the single building was considered more important than the hierarchy of the urban spaces.
The "dialogue" between the buildings is evident in various points of Via Dante, especially in the final stretch towards Foro Bonaparte.
The tension between the buildings on both sides, and also between the two head-buildings towards the Castle, is favoured by the relatively narrow width of the street – 20 metres – with regard to the height of its buildings – 23 metres – and by the absence of trees.
The relatively constant widths of the facades along the last stretch of the street seems to prove its planners' wish to harmonize the architecture of the buildings already in the phase of lot subdivision.
This aspect is accentuated by the subdivision of the facades into an uneven number of bays and by the placement of the main doorway on the central axis in three of the buildings. Thus a play of correspondences is put forth, which regards both the composition of the facades and the entrance spaces of the buildings; the latter aspect enriches the urban space by way of the rapport between the street and the courtyard, thus introducing a further variation on the theme of the axis and the backdrop, recognizable on a larger scale in the relationship between Via Dante and the Castle tower.

With regard to today's cities, it seems advisable to adopt rules to achieve harmony between the buildings, since it not possible to rely on a culture shared by the majority of the citizens, as was still the case up to the first decades of the 20th century.
Research on Via Dante has revealed the importance of certain aspects of the buildings which give quality and character to the street space. Three factors seem to have been especially important: the control of Cassa Sovvenzioni's "Art Commission", the examination of the Municipal building commission and the prize competion for the best buildings.
It should be noted that the buildings planned after the approval of the competition show a greater planning effort, thus proving the effectiveness of the measure. Maybe the idea of a competition could be reintroduced today, and this would be a challenge to the lack of a shared architectural culture.
In some examples of contemporary urban planning in Europe, realized during the last two decades, similar criteria to those used for Via Dante have been utilized. This shows that the principle of homogeneity without uniformity goes beyond 19th century urban esthetics and has more general validity.
The application of the idea of the street as a "ribbon of scenes" can be found in recent examples such as the row houses in Amsterdam's Borneo Sporenburg neighborhood (1993-1996) or the buildings lining Berlin's rebuilt Friedrichstadt district[24]. In particular, the Berlin case proves that the adoption of architectural rules typical of the late 19th century European city – of which Via Dante is a significant example – may still lead to convincing results, in spite of the differences of building materials, construction techniques and architectural languages.

Notes

[1] See Villa A., Parigi, in Aymonino C., Fabbri G., Villa A., *Le città capitali del XIX secolo. Parigi e Vienna*, Officina, Roma, 1975, p. 125.

[2] See Hautecoeur L., *Histoire de l'architecture classique en France*, tome VII *(La fin de l'architecture classique, 1848-1900)*, Picard, Paris, 1957, pp. 74-76.

[3] See Loyer F., Paris XIXe Siècle. *L'immeuble et la rue*, Hazan, Paris, 1987, p. 50.

[4] See Hitchcock H.R., L'architettura dell'Ottocento e del Novecento, Einaudi, Torino, 1971, p. 75.

[5] See Patetta L., *L'architettura dell'eclettismo*, Mazzotta, Milano, 1975, p. 318.

[6] See Patetta L., *L'architettura dell'eclettismo*, Mazzotta, Milano, 1975, p. 334.

[7] See de Finetti G., Milano. *Costruzione di una città*, edited by G. Cislaghi, M. De Benedetti, P. Marabelli, Etas Kompass, Milano, 1969, p. 37.

[8] See Basso Peressut L., *La "Nuova Milano". Città virtuale e città reale nei progetti per l'area Sempione-Magenta. 1860-1906*, in *La Milano del piano Beruto (1884-1889). Società, urbanistica e architettura nella seconda metà dell'Ottocento*, vol. I, edited by R. Rozzi, Guerini e Associati, Milano, 1992, pp. 313-348.

[9] See *Relazione della Commissione consigliare intorno al Piano regolatore e d'ampliamento*, in Atti del Municipio di Milano (Milan Municipal Acts) 1885-1886, January 8, 1886, pp. 134-185.

[10] See Aprà F., De Carli M., Milone O., Semino G.P., *Case da pigione borghesi a Milano. La realizzazione del Foro Bonaparte e della via Dante nella seconda metà dell'800*, cit., p. 43.

[11] See Lacave M., *L'operazione di via Dante a Milano*, in "Storia Urbana", a. VI, n. 25, October-December 1983, p. 131, note 93.

[12] See Lacave M., *L'operazione di via Dante a Milano*, cit., p. 132.

[13] See Historic Municipal Archive of Milan (ASCM), fondo *Piano Regolatore*, cart. 1461/3.

[14] See Municipal Acts of Milan (AMM), 1891, seduta 9 gennaio 1891, pp. 143-144.

[15] See Boriani M., "*Il popolo intende ed ama naturalmente le antiche memorie purché le sieno evidenti". Uso e abuso dei monumenti nella costruzione della Milano ottocentesca*, in *La Milano del Piano Beruto (1884-1889)*, vol. I, cit., p. 401.

[16] See Broggi L., *Gite d'un architetto*, F.lli Dumolard, Milano, 1887.

[17] See Grandi M., Pracchi A., *Milano. Guida all'architettura moderna*, Zanichelli, Bologna, 1980, p. 71.

[18] See Grandi M., Pracchi A., Milano. *Guida all'architettura moderna*, cit., p. 71.

[19] See Cantalupi A., *Istituzioni pratiche sull'arte di costruire le fabbriche civili*, Galli e Omodei, Milano, 1874, and Sacchi A., *Le abitazioni: alberghi, case operaie, fabbriche rurali, case civili, palazzi e ville*, Hoepli, Milano, 1878.

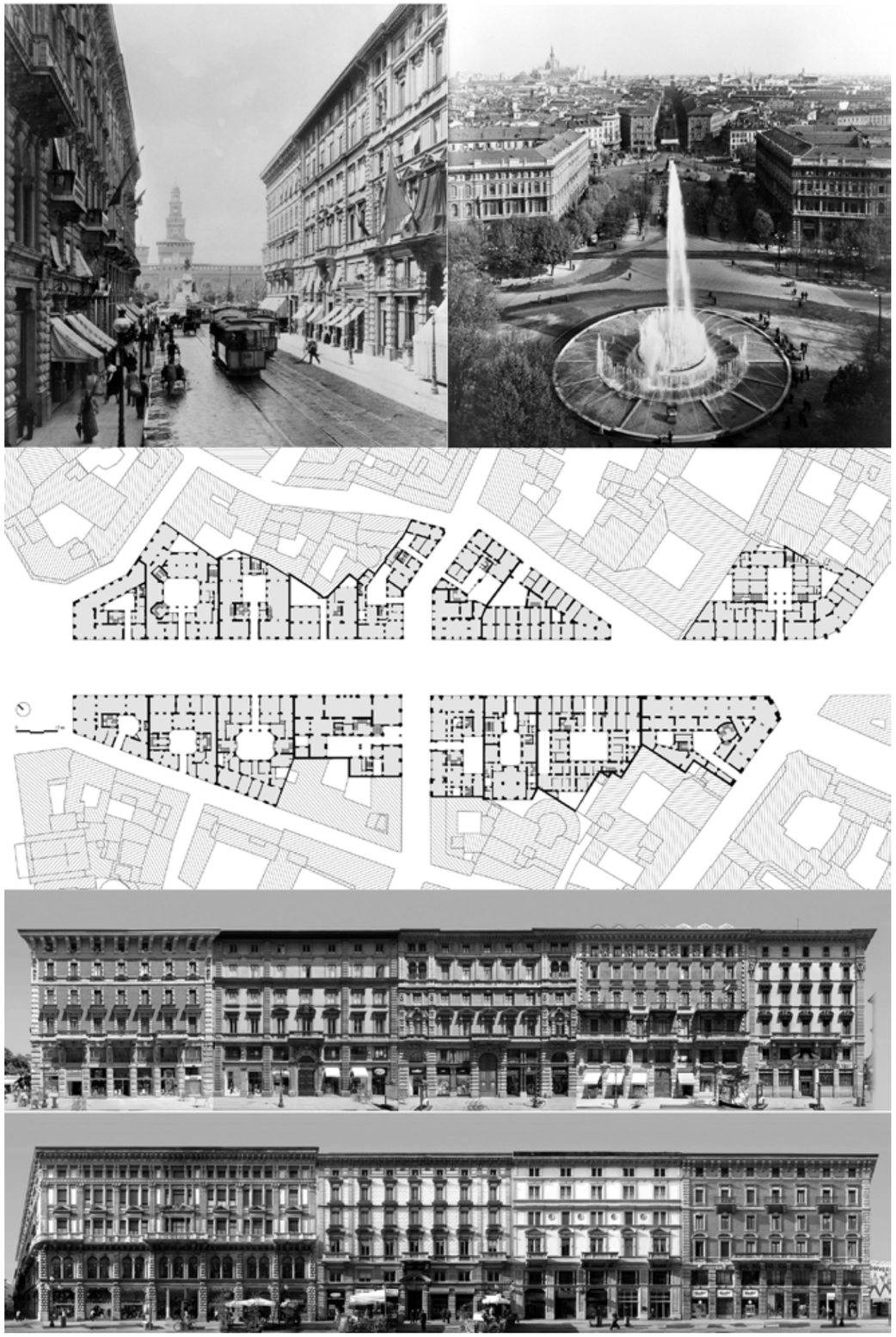
[20] See Aprà F., De Carli M., Milone O., Semino G.P., *Case da pigione borghesi a Milano. La realizzazione del Foro Bonaparte e della via Dante nella seconda metà dell'800*, in "Controspazio", a. IV, n. 11-12, November-December 1972, p. 36.

[21] See Aprà F., De Carli M., Milone O., Semino G.P., *Case da pigione borghesi a Milano. La realizzazione del Foro Bonaparte e della via Dante nella seconda metà dell'800*, cit., p. 39.

[22] See *Capitoli speciali per le fabbriche da erigersi lungo la nuova via dal Cordusio al Foro Bonaparte, deliberati dal Consiglio comunale nel giorno 11 gennaio 1887*, artt. 3-10, 15.

[23] See *Capitoli speciali per le fabbriche da erigersi lungo la nuova via dal Cordusio al Foro Bonaparte, deliberati dal Consiglio comunale nel giorno 11 gennaio 1887*, art. 5.

[24] See Caja M., Malcovati S., *Berlino 1990-2010. La ricerca sull'isolato e sul quartiere*, Libraccio-Lampi di stampa, Milano, 2009.



1. Via Dante and the Castle, circa 1906.

2. The fountain in front of the Castle and the entrance of Via Dante, circa 1940.

3. Plan of Via Dante with the ground floor plans of the buildings.

4. The facades on the north-eastern side of Via Dante, between Largo Cairoli and Via San Tomaso. Photo by Lucas Corato, 2009.

5. The facades on the south-western side of Via Dante, between Via Giulini and Largo Cairoli. Photo by Lucas Corato, 2008.

Marja Sarvimäki
University of Hawaii, USA

Activating Emptiness: Bricolage of Japanese urban context

The focus of this paper is the concept "empty center" of Japanese cities, famous for Roland Barthes' descriptions on Tokyo. This semiotic paradox, or binary opposition in Derridean terms, exposes not only the noticeable difference in the appearance of "Western" and Japanese cities, but also the value-laden and ethnocentric categorization of signs in the structural interpretations of their meaning. Whereas the former cities are typically characterized by a center marked by the culture's symbols, such as a church, a town hall, a cluster of company headquarters, and so on, the absence of *anything* in the center of a Japanese city is often interpreted as "hollowness" which completely disregards the plurality of meanings in this cultural framework.

Except for the castle cities and imperial capitals, most Japanese cities do not have a perceivable center at all – neither "full" or "empty" – and even Kyoto eventually lost its planned Chinese-type orthogonal, grid-patterned, axial and symmetric layout with a centralized imperial palace. In many Japanese cases, only the procession of local Shinto festivals hints at the location of certain places of significance, that is, where the festival events *take place*. Because investigations on the structure of these rituals also reveal a hidden organization of the city or a building complex itself, the primary goal of this paper is to provide new means of analysis by looking at the spatial layering of Japanese architecture in terms of the communal festival experience and its interrelationship to the built environment. As will be shown below, contrary to the conventional view of most foreigners visiting Japan, these cities are far from chaotic and instead relatively ordered from the perspective of the local residents. The order, and the centers, are just marked by the events, in other words, by a bricolage of temporal behavior of the community, rather than by any permanent structures.

Yet, even if most visitors blame the lack of an address system for the "chaos" of Japanese urban environment, there actually is a system, just not based on street names (except for some biggest avenues). Rather than naming the lines separating the building blocks, this spatial organization is based on numbering the order in which each block was divided into plots, built, further sub-divided, and so on – only a mailman, not even a taxi driver, fully comprehends it today. In other words, the Japanese urban structure is defined by the building activity that has taken place in it, while this evolvement is still depicted by various rituals meaningful for the local community.

For the purpose of this paper, this space-time concept of Japanese architecture is discussed from the perspective of the regular Shinto rituals. Of these, the most significant in many ways is the ritual renewal of the Ise Shrines every 20th year, including not only rebuilding the main shrine complexes on one of the two adjacent sites of both Naiku ('inner shrine') and Geku ('outer shrine'), but also those of the ten auxiliary shrine precincts, in addition to remanufacturing the about two thousand artifacts and treasures housed in the shrine buildings. Without delving into the many interesting phenomena of this vicennial custom, continued since the 690s, with some interruptions during wartimes,[1] we look at the concept of center and its representation in the architecture of Ise Shrines. In this respect, the 'sacred center column,' or *shin-no-mihashira*, is of most interest from the perspective of the "empty center," as in Naiku it is completely buried, while in Geku a little more than half of it is above the ground level. As such, the pillar is entirely separate member from the shrine structure and covered with its own hut-like shelter. Also, in both cases the column with its shelter is under the elevated floor of the main shrine hall, *shoden*, where it is completely invisible even for those very few who are allowed to enter this innermost part of the three-layered shrine precinct.[2]

Although invisible and non-structural, the importance of *Naiku's shin-no-mihashira* is clearly indicated by the placement of the most important imperial regalia, the sacred mirror, right above it in the *shoden*, which metaphorically creates the *axis mundi* that signifies the emperor's role as the representative of the higher forces on earth. (Naiku is dedicated to the Sun Goddess, *Amaterasu Omikami*, the antecedent of the Japanese imperial line based on State Shinto mythology.) Furthermore, while several communal Shinto festivals, or *matsuri*, take place during the years-long rebuilding process of Ise Shrines, such as the ceremonies held on the mountains prior to cutting the timbers and the log-pulling festivals in which these highly valued Japanese cypress (*hinoki*) logs are hauled to Ise by thousands of participants, the ones related to the *shin-no-mihashira* take place in the darkness of the night only by the priest performing these esoteric rites.[3] Also, there is evidence that already originally some rituals were performed under the shrine hall[4] and, according to Bock's account of the renewal rites in 1973, after the completion of construction "the Superintendent of the Shrines and sixty shrine priests congregated beneath the main sanctuary to perform the rite of strengthening the main central pillar."[5] Moreover, the shin-no-mihashira is the only part of the old shrine that is not demolished after the new shrine is completed and stands in its shelter on the empty plot till the next rebuilding on it begins. In other words, it marks the center of the plot especially when the other structures are demolished and indicates the temporal duality of Shinto symbolism with two central pillars existing simultaneously.

The concept of a "cosmic pillar" as an indication of the *axis mundi* and the "center of the world" is, of course, a common phenomenon in numerous cultures, and there are many other examples of it in Japan, too, such as the Izumo Shrine for which space does not allow discussion here. Even if not part of a structural system of a shrine, the middle pillar is a significant part of East Asian cosmology, as it refers to the nine cells of the basic mandala diagram, with the most important one in the middle; the empty center also is of utmost importance in the *sunyata* ('emptiness') philosophy and particularly significant in Zen Buddhism.[6]

The cosmic pillar also appears in Japanese residential architecture with the 'sacred central pillar,' or *daikoku-bashira*. It is not even necessarily located in the geometric center of the house, but its role in defining the ie, meaning both the 'house' and the 'family,' in relation to the society and the cosmos, is revealed by its association with the guardian deity of the household (*Daikoku-sama*). Moreover, although the *daikoku-bashira* of a house is typically an integral part of the structural framework and sometimes slightly larger in cross-section than the other structural members, visibly it is not very different from the other members of the completed building. Its function in the house building rituals, however, is clearly distinguished. In the ridge-pole-raising ceremony (*muneageshiki*), which completes the main framework of the house, the *daikoku-bashira* is decorated with various Shinto symbols, such as white *heishoku* paper-cuts and a wooden plate (*mune-fuda*) including prayers to the *kami* (*deity*) who protect the family, while an altar containing offerings to the *kami* is placed on the foot of the post; in addition, the altar includes the carpenters' tools, signifying their art. The carpenters are in an important role during the ceremony as well by assisting the Shinto priest in the various rites, ending in the transference of the 'corner rice cakes' (*sumi mochi*) from the altar to the four corners of the roof from where they are thrown diagonally across the center of the house; in many ceremonies, rice and sake is thrown from the ground level corners towards the center as well. The four corners and the center are emphasized in the ground breaking ceremony (*jichinsai or chiniisai*) prior to the construction, too. In this rite, the sacred area in the middle of the plot is depicted by a pole or tree branch and a sand cone (*rissa*), while smaller poles or tree branches (usually *sakaki*, pine, or bamboo) are located in the four corners and connected with a *shimenawa* rope decked with *heishoku* paper-cuts.[7]

In addition, centralized organization has been fundamental in the layout of East Asian capital cities ever since the Chinese Zhou Dynasty (1027-421 BCE) and the publication of the "Record of Artificer" (*Kaogong ji*) with illustrations of a model capital city. This kind of orthogonal, grid-patterned city structure, with three concentric parts (outer city, inner city, and imperial city), again, refers to the mandala configuration, while the north-south thoroughfare of the city and the central palace on it stands for the *axis mundi*; in the Chinese case, this depicts the socio-political concept of the Mandate of Heaven based on which the emperor, the Son of Heaven, ruled his subordinates as the Heaven's representative on earth. Together with Buddhism, Confucianism, and other mainland-Asian phenomena, these principles became known in Japan by the Asuka period (ca. 550-710 CE) and were used in the layout of all Japanese capitals from Fujiwara-kyo till Heian-kyo (Kyoto); this is evident even in the aforementioned axial layout of the Ise shrines and their orientation towards north, instead of the sacred mountains which was the supposed original orientation.[8]

From the perspective of this paper, it is noteworthy that the late Heian period (794-1185 CE) was characterized by the absence of official interaction with the mainland for almost three hundred years which led to the Japanization of many features of Japanese culture. Not only did the Japanese residential architecture transform from the Chinese-type, axial *shinden-zukuri* to the asymmetric layout of *shoin-zukuri*, but city planning principles changed as well. As mentioned above, even the layout of Kyoto did not achieve its planned axial symmetry along a north-south oriented thoroughfare and, in fact, the western part of the city was never built. On the other hand, with the rise of the samurai class, a number of daimyos' concentric castle cities were built mainly in the Muromachi-Momoyama period (1335-1603), in which the central fortress certainly was an imposing representation of power. This culminated in the Togukawa castle in Edo (today's Tokyo, though the castle does not exist anymore in the imperial palace grounds) that was the real political center of the shogunate, while the imperial seat in Heian-kyo lost its factual power. Also, an impressive, fortified residence, Nijo-jo, was built near the Kyoto Gosho imperial palace for the Tokugawas while in the imperial capital.[9] In other words, Kyoto remained a symbol of the empire, just as the emperor was only a symbolic ruler till the Meiji Restoration in 1868.

In spite of the centralized feudal system of the shogunate, most Japanese smaller cities built in the Edo period (1603-1868), seem to lack visual signifiers of the central authority, at least in the center. Instead of a monument or any kind of a symbol of power in the middle, the most significant buildings, like Buddhist temples, Shinto shrines, and mausoleums, are in the perimeters of these towns. Among numerous examples, the small fishing village of Shingu in northern Kyushu sheds light onto this phenomenon. Unlike many Japanese towns that grew almost organically, Shingu was planned by the feudal authorities in the 17th century. In addition to the interesting contemplations by Arne Kalland on the geomantic practices in Shingu, he points out that the various Shinto festivals and location of certain objects of importance can be regarded as representing the life course of the villagers, and implicitly the structure of both the community and the town. For instance, the Isozaki-jinja Shrine in the northeast symbolizes the birth with its fertility stones; this is also where the babies born in the previous year are brought for the *Hassaku* ritual in September, as well as three- and seven-year-old girls and three- and five-year-old boys for the *Shichi-go-san* ('7-5-3') festival in November. Further to the southeast there are other symbols associated with youth, nothing notable in the south, and the Sainen-ji temple with the cemetery in the west, the direction of Amida Buddha's paradise. Moving further clockwise around the center without anything notable there, we do not see any religious buildings in the north, until the *torii* gate leading to the Isozaki-jinja in the northeast, which starts the eternal lifecycle again.[10]

The both diametric and concentric structure of Shingu (evident also in the Ise Shrines) is further expressed by the *Gosengu* festival that is arranged every eighteen years. It is the occasion when the geometric center of Shingu at the crossing of a lane and the Nakamachi ('middle town') Street, the main east-west thoroughfare in the middle (as the name implies), is activated by the festival rites – otherwise there is nothing else there than an ordinary intersection.[11] The same applies to the Kakunodate city's annual festival, *Oyama-bayashi*, every September of which Fred Thompson has published an inspiring study that is particularly relevant to the argument of this paper. The procession takes place between the two shrines of the town, Shinmei-sha and Yakushi-do, with a stop at the house of Satake, whose ancestors were the representatives of the central government in town during the Tokugawa shogunate; like Shingu, Kakunodate was rebuilt in the 17th century by the feudal authorities. The foci of the festivities, however, are the neighborhood altars, or *hari-ban*, which are constructed for every festival and demolished afterwards – in other occasions, these sites might be parking places or other mundane spaces. During the festival, there is one *hariban* in each of the distinct districts of the town called cho-nai, further divided into several units.

In the feudal period, the cho-nai system restricted the mobility of the townspeople, as there were watch-gates at the boundaries of each district. Although there has been many changes in the physical and social structure of Kakunodate, and the watch-gates have long been gone, this invisible division is still mostly preserved in people's minds which becomes demonstrated in the *Oyama-bayashi* festival activities. Namely, every year the entire community re-organizes itself into the feudal cho-nai teams for the festival in which each team moves a portable shrine wagon along the streets. The goal of the teams is to visit as many hariban as possible without being blocked by other teams. In this wild game of complicated rules, the teams change their status depending on whether they are approaching a *hariban* (*nobor*i, 'going up' and having the way of right), or proceeding to the next cho-nai after having visited a *hariban* (*kudari,* 'going down' when other teams 'going up' have the way of right); after a team has crossed the invisible border between two *cho-nai*, it is in the state of *nobori* again and has the way of right. The whole procedure can be considered a representation of the social hierarchy and re-bonding of the communal relationships, which is also expressed by the communal eating and (usually excessive) drinking of sake; important elements of any *matsuri*.

Despite the conceptual dichotomy, it is important to note that in Shinto theology there is no separation between sacred life, known as *hare*, and secular life, or *ke*. As stated by Thompson, "*matsuri* is referred to as *hare-no-hi*, the days of *hare*. It is the time when ke is restored to its original state and the communion takes place through the ritual of renewal."[12] He connects this spatial mode of social integration with the concepts *kaiwai* ('activity space') and *ma* ('space-time') by stating that "what was commonplace for the Japanese was a communal ordering of physical spaces through a variety of rituals, non-festive and festive, rather than conceptual formation of permanent monuments and civic spaces. Underlying this physical organization is the inherent quality of *ma*, which implies that, by themselves, the spaces are void, but with activity they take on forms which are meaningful to the participants."[13]

In conclusion, by these means of activities the Japanese built environments represent the on-going cyclic process of life of both the community and the city, defining cosmos from chaos. And in all of these cases, whether sacred or secular, the organization of the community and the city (or a building complex) is indicated and strengthened – in other words, regularly renewed. This occurs by the concentric commotion of the partakers around the seemingly "empty" center, yet indicated by invisible means, which bears close resemblance to the mandala diagram.

Marja Sarvimäki
University of Hawaii, USA

Legenda

Analysis of the layout of a part of Kakunodate:
(1) Shows the relationship between the streets and the building blocks with typical Japanese townhouses (*machiya*) that are built attached to each other and fill a whole block.
(2) Indicates the location of each temporary neighborhood altar (*hariban*) along the streets.
(3) Illustrates the city's organization as it is revealed by the annual festival in which the community is divided into teams according to the feudal *cho-nai* system with one *hariban* built for the festival in each *cho-nai*; although the lines between the cho-nai (the dotted lines) are now invisible in the built reality, they play the main role in the rules of the festival procession and therefore must be in the mind of the townspeople even during ordinary days. In other words, the *cho-nai* division is the actual layout of the city according to which people identify themselves as belonging to a particular group (same as their team in the festival).

Bibliography

Barthes, Roland. *Empire of Signs*, Hill and Wang, New York, 1982.

Berque, Augustin. "The Rituals of Urbanity: Temporal forms and spatial forms in Japanese and French cities," pp. 246-258. *Ceremony and Ritual in Japan: Religious Practices in an Industrialized Society,* van Breman, Jan, and D. P. Martinez eds., Routledge, London, 1995.

Bock, Felicia G. "The Rites of Renewal at Ise," pp. 55-68. *Monumenta Nipponica*, Vol. 29, No. 1 (Spring 1974), Sophia University, Tokyo, 1974.

Coaldrake, William H. *Architecture and Authority in Japan*. Routledge, London/New York, 2002.

Kalland, Arne. "Geomancy and town planning in a Japanese community," *Ethnology*, Vol. 35, no. 1, Winter 1996, pp. 17-32.

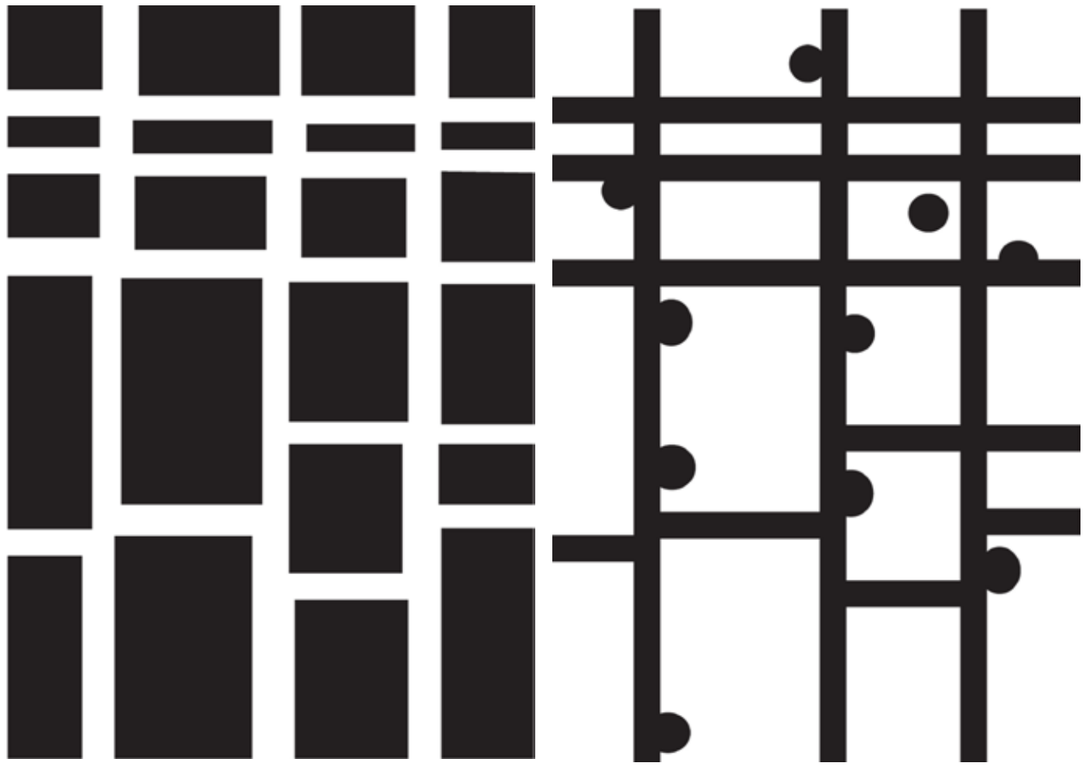
Nitschke, Günter. *From Shinto to Ando: Studies in Architectural Anthropology in Japan*, Academy Edition, London, 1993.

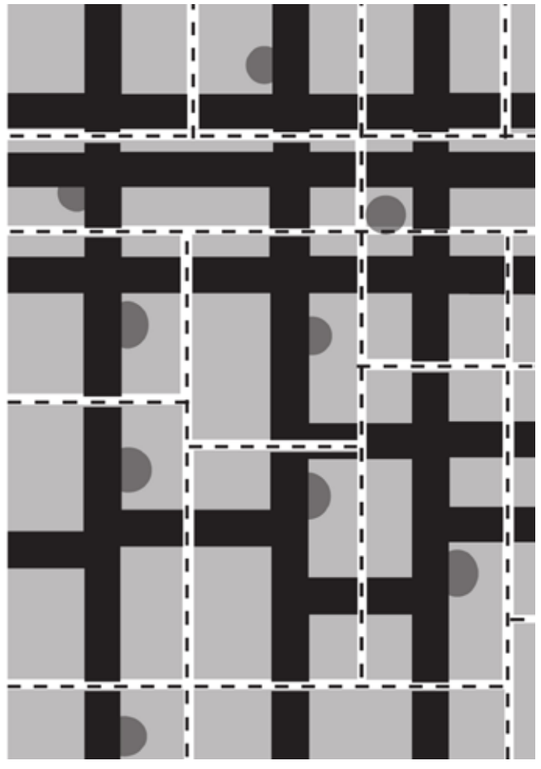
Sarvimäki, Marja. *Structures, Symbols and Meanings: Chinese and Korean Influence on Japanese Architecture*, Helsinki University of Technology, Espoo, 2000.

Thompson, Fred. *Ritual Renewal of Space in Kakunodate and Shiraiwa*, University of Waterloo, Ontario, 1984.

Notes

[1] E.g., Bock, 1974: 56, 58, 60.
[2] Sarvimäki, 2000: 201.
[3] Bock, 1974: 61.
[4] Nitschke, 1993: 17-18.
[5] Bock, 1974: 61.
[6] Sarvimäki, 2000: 192-195. It must be pointed out that, although Shinto belief is mainly discussed here, most of the time since the introduction of Buddhism in Japan in the mid-500s there has not been a sharp contradiction or separation between Japanese Shintoism and Buddhism, and many similar concepts appear in both.
[7] Ibid: 199-201.
[8] In the prime imperial shrines in Ise, this merge of thoughts is expressed by the "Chinese axis" and "Japanese details." For more on East Asian cosmology and its transformations in Japan, see Sarvimäki, 2000.
[9] In addition to the many urban transformations in the layout of today's Kyoto, the original imperial palace, that would have been along the central axis had the western part of the city been realized, was abandoned after a few fires. Hence, the former imperial side-palace became the de facto imperial palace; now known as Kyoto Gosho in its mainly rebuilt condition. Coaldrake, 2002: 81-93, 138-162.
[10] Kalland, 1996: 27-28. Like in most cultures, east is associated with birth and west with death. In Japan, most weddings take place in a Shinto shrine and funerals in a Buddhist temple.
[11] Ibid: 29. Here Kalland refers to Claude Lévi-Staruss' classification of two settlements patterns: (1) the diametric structure divided into two halves by an axis, and (2) the concentric structure with circles around a center.
[12] Thompson, 1984: 15.
[13] Ibid: 28.





Graziella Fittipaldi - Francesco Scricco
Politecnico di Bari, Italy

New models for the foundation cities in Puglia and Basilicata

The major work of reclamation and the consequent foundation of a considerable number of urban centers and rural villages, taken by the Fascist regime, represent an experience of extraordinary importance for Italian urban planning. Undoubtedly, in a period during which an intense international debate developed on these issues, Italian architectural culture provided a significant contribution. It is no exaggeration to speak of an Italian approach to urban planning, characterized by three dominant factors:
- a unitary approach to the processes of defining the “forma urbis”;
- the design of the plan as a great architectural project, with particular attention to a three-dimensional conception of urban space;
- the close relationship between the development plans of the urban center and those of the landscape.

The reclamation of the Pontine Marshes, undertaken in the late 1920s, represents the best-known chapter of this experience, due to the emphasis given by Fascist propaganda, both due to its proximity to Rome and the stature of the actors involved. The similar operations conducted in Puglia and Basilicata, despite receiving less attention, deserve more, both because of the persistence of the general characteristics listed above and the spatial extent of the areas involved as well as the effects on the structure and morphology of the land.
Even in the early 1900s, the Tavoliere of Puglia, with its extension of 400.000 hectares, was a sparsely populated place. This was due to the harsh environmental conditions in winter, malarial swamp for long stretches in the coastal zone, the absence of road infrastructure and the monoculture based on large estates of cereals.
The Salento peninsula, as well as presenting a similar environmental situation, with extensive marshes, was in a state of semi-abandonment from the point of view of agricultural production, since it had been used by landowners for extensive livestock farming.
The condition for Metaponto and the whole area of the Ionian coast of Basilicata was even more dramatic. It was a large area which had been virtually abandoned for centuries, a completely unproductive wetland lacking a road system.
Recovering and developing all these depressed areas had been proposed on several occasions prior to the rise of the Fascist regime, but did not deal with situation in its entirety: that is not only confronting problems of land reclamation and infrastructure, but also those related to an essential redistribution of land ownership.
The intended goal was to transform the wetlands into healthy and hospitable agricultural production centers, where the small rural towns would serve as a link between the countryside and the main urban centers. This would have been the result of anchoring the settlers in the agricultural area, while avoiding the overcrowding of cities, with the consequent degradation of the suburban outskirts.

2. Territorial model

The first regional-scale interventions on the Tavoliere of Puglia were coordinated by a number of authorities (Opera Nazionale Combattenti, Consorzi di Bonifica, Acquedotto Pugliese, Genio Civile) acting with little coordination and without an overview of the area. Thus the interventions made were sectorial, often of good technical quality, but unable to alter the shape of the land.
The first General Plan for the Reclamation was entrusted by Enrico Serpieri, undersecretary of Bonifica Integrale, to Roberto Curato in 1932 and approved in 1934. The plan proposed, as an ideological principle, the policy of “Disurbanesimo”, imposed by the Fascist regime (Ciucci, 1989) and that of two-stages, which provided the infrastructure of the countryside with public intervention, followed by agrarian reform implemented by the private sector. For the urban centers, the construction of rural villages was followed by the demolition of neighborhoods with unhygienic conditions. As in the experience in the Agro Pontino, the role played by veterans of the Great War (held in high regard by the regime for political reasons) as well as by the laborers and the people expelled from the cities was essential. They were employed as cheap labor for the reclamation, for the subsequent transformation of agricultural land, finally becoming settled farmers and landowners.
Regarding the planned urbanization, it consisted of 5 towns (Gubito, Onoranza, Rignano Stazione, Santa Annunziata, Tressanti) and 98 rural centers. The towns, designed for a population of 50 families, had to be equipped with: a town hall, home of the ONB and OND , Carabinieri, Milizia Volontaria and police stations, a school with gym and housing for teachers, a church with accommodation for the parish, a hospital, a pharmacy, a post and telegraph office, retail spaces and a sports field.
The rural centers were designed as smaller settlements to be allocated to 20 families, housed in semi-detached houses, with offices of the National Fascist Party, ONB and OND, a school, with gym and accommodation for a teacher, a church and parsonage, an outpatients clinic with pharmacy, a post and telegraph office, small businesses. For the latter, during 1932, a diagram for typical plan was produced, by the engineer Mario Quaglini.
The construction of rural centers, including Borgo Laserpe (1933), Borgo Tavernola (1935), Siponto (1935), resolved just the situation of many families of laborers, who lived in miserable conditions on the edge of the main urban centers (Scaramuzza, 1936). In fact it was unable to generate the intermediate size between town and country, that would help to stabilize the laborers on the land, who were otherwise inevitably attracted by the larger cities.
The plan was not fully realized, due to the underestimation of the costs in the planning stages and the lack of available funds, as well as the differences regarding the role and timing of construction of the towns (Tramonte, 1935). What was missing, apart from the completion of infrastructural works, less than an half finished, was the settlement construction, which would have allowed a widespread rootage of settlers on the land (Carrante, 1937).
The real big boost to the colonization of the Tavoliere occurred when the ONC , in the person of its President Araldo di Crollalanza, concentrated decision making and planning activities, appointing the architect Concezio Petrucci to draw up a masterplan for the area. The goal was to replicate the territorial system used in the Agro Pontino, based both on the division of the land into estates and on the achievement of a mesh of widespread urban centers. These urban centers, in descending scale, could help the urban facilities to be dispersed throughout the land.
Taking the city of Foggia as a focus in the conformation of the land, Petrucci conceived three major areas, arranged in a circle around the city, each with its own center, consisting of new rural towns: Daunilia, Segezia, with the small villages of Stazione Cervaro and Stazione di Troia; Incoronata, with the village of Masseria Nuova. The scheme involved a series of scalar passages, with a progressive increase in services offered to the population: from the elementary cell formed by houses scattered on farms, to the rural village offering a first set of basic services, then to the rural town offering all services. The plan was approved in 1941 and took advantage, during its construction, of the projects just realized for the three rural towns.
The execution of the masterplan was finally stopped by the war, before the construction of Daunilia and the villages of Masseria Nuova, Passo di Corvo and Arpi had started and before the others were completed. However, it remains a project of great complexity, evidence of the fervor of the Italian culture of the 1930s on the theme of modern city planning and “new towns”.
The reclamation of swampy areas of the Salento peninsula, undertaken from 1928, was similar to the experience of the Tavoliere, especially in the territorial model adopted, based on a hierarchy of urban centers spread over a wide area. The classification into rural centers, rural townships and villages was resumed, each one with its own specific equipment services, and with a mutual distance not exceeding 4 km. The main difference lies in the scale of individual interventions, consisting of small urban centers, which often stood on the existing network of farms. A policy which included the economic participation of private citizens was also implemented. These were nearly all members of the rich land-owning families, who in exchange for funding and tax breaks, went on to establish small rural villages on their lands. It was an economic model, based on corporatism as a third way between capitalism and communism, in which models of settlement flowed midway between Roman colonization, British new towns, ruralism and functionalism.

The operation conducted in Basilicata moved along similar lines, both in terms of the involvement of large landholding families and in terms of the settlement pattern. Due to the peculiarities of the territory, a stretched mesh of estates was adopted, in which the network of existing farms was pivotal. This created a complex system that started from the towns on the hills and descended to the coastal reclaimed areas, arching over the farms located in between.

3. General characteristics of the urban planning

Compared to the themes developed by the international architectural culture, the models developed in Italy did not embrace the principles of a garden city, in particular regarding the role attributed to urban public spaces (squares and streets), conceived as representative of urban identity itself.
Streets and squares continued to maintain their role as places of representation for the symbols of political power, held by the public buildings, partially using much more abstract functionalist European research.
This attitude was undoubtedly a consequence of the fact that in Italy all the experiments with the Modern Movement were set in a strong urban tradition, never denied, even enhanced by the necessities imposed by the dictates of the regime and by the autarky. Not only the role of public spaces, but also the organization and hierarchy of the minor streets seem to suggest the processual and historical stratification of the consolidated urban buildings.

Even in the structuring of the urban morphology, there was a clear reference to tradition, in the appeal to the rationality of systems based on the Roman Cardo-Decumanus model, albeit mediated by theories of Camillo Sitte. The focus of the composition is generally formed by the central square, like a modern forum, in which the symbols of the civil, political and religious power were placed: the Town Hall, the Casa del Fascio and the church. The main streets always converge on the central square, almost as a matrix paths of the building settlements, usually drawn from the local tracks, confirming the fact that the settlement principles and logic of urban structure were placed in close relationship with regional developments (Strappa, 2002).
Regarding the intersection of the paths in the central square, the pattern recalls the orthogonal layout of the Roman Cardo and Decumanus, although often with staggered or bayonet-like entrances. This device, derived from the theories of Sitte, gave a backdrop perspective to the street, usually made of a public building, characterized by a vertical element with a high urban value (tower, bell tower or Casa del Fascio). This attitude shows a prospective approach to urban composition, adopted to promote a forced view, clearly inspired by metaphysical fixity. On the other hand, the shift of the axis was clearly influenced by Futurist dynamism. Even the aggregation of buildings was inspired by modern building theories, as result of an organic conception of space: it was compositions were made up of pure juxtaposed volumes, connected by hierarchically subordinate elements (the frequent use of arcades).
There are also obvious references to the principles expressed in “Valori Plastici”, for this duality between abstraction and classical, the outcome of which is given by the image of these isolated areas in the countryside, which correlate archetypal elements with each other (tower - bell - arcade).
This result was made possible by the fact that the activity of urban planning was seen as an architectural project; the entire urban design was a unitary and organic composition, the result of a three-dimensional approach to design, not yet imbued with the logic of zoning. One cannot overlook the fact that the author of the plan was often the author of the main buildings, which ensured more overall organicity.
Closer proximity to urban planning principles of the Modern Movement could be found in residential areas designed as open and serial systems, in which the arrangement of buildings was based on modern principles of sunshine and distance between buildings.
The close and continuous urban fabric of the historical Italian cities was dissolved, and the logic of the block as a basic part of the city was denied, in favor of the logic of the fragments of single residential units. Similarly, the open spaces lost their definition as spaces rooted in the urban fabric, exposing a loss of identity.

4. Analysis of main urban systems

4.1 Typical Rural town - (1932-33)
designer: engineer Mario Quaglini.

The system includes a large rectangular square, with its short side at the edge of the main highway; a second path, parallel to the first, cut the square off-center, identifying a smaller area which the public buildings overlook, and a larger one, surrounded by wooded edges and four semi-detached houses. The remaining six houses were arranged tangentially to the main road, on the opposite side of the square. All houses had a large garden. The church is located centrally on the major axis of the square, with the rectory located on the side, breaking the rigid symmetry of the scheme. The headquarters of the PNF , the school and the shops were arranged on the sides of the square.

4.2 La Serpe (Mezzanone) Rural Town – (1934-35)
Designers: architect Domenico Sandri - engineer Giovanbattista Canevari.

The plan, clearly defined in the overall design, closely follows the pattern type: the central square appears elongated, with trees on all sides and houses arranged on most sides. The remainder of the square, identified by one of two main routes that fits into a decentralized position on the long sides, is occupied by public buildings. The church is aligned along the main axis of the square. It is based on a scheme with a single nave, with a deep apsidal termination, made asymmetrical by the extroversion of the side chapels and by the rectory, and offset by the provision of the tower. The façade, enclosed by the compact volumes of the baptistery and a minor Chapel, is inserted in a horizontal lintel arcade, which runs along the sides of the square. This arcade joins the religious building with the school and the Casa del Fascio, near the street, culminating in the tower of the house of the Casa del Fascio itself, an additional vertical element in the landscape, a counterpoint to the bell tower.
In front of them, were placed the surgery, the post office and shops. The sports field was placed behind the church.
It is ultimately a quite closed plan, for which, strictly following the requirements of the landscape masterplan, the possible directions of expansion of the urban fabric and streets were not indicated.

4.3 Daunilia – (1939)
designers: chief engineer Dagoberto Ortensi, with engineers Vincenzo Civico and Ettore Granelli and architect Giulio Roisecco.

The diagram assumes the axis of the Bari-Foggia highway as its matrix path, standing on one side thereof, through a wooded buffer area. A second route, directed towards the station, sits at right angles to the first, in a central position with respect to the central square. Here was concentrated the innovation of the project: the space of the plaza is in three parts by two high porches with large arched openings, arranged parallel to the shorter sides. The town hall with the tower was placed in the central portion, aligned with the route to the railway station. In the other two areas, the church with its tall steeple and the school were placed on one side, with the Casa del Fascio on the other side. The tripartite space symbolically reflected the presence of the local authority of the town hall, the political authority with the Fascist Party, then the spiritual one with religious institutions. The appearance was that of a well proportioned complex, with calculated dissonance (the bell tower, the tower, the planimetric development of some buildings) which was inserted to break the rigid overall symmetry. The residential urban fabric was composed of two different housing types, both low-density: detached or semi-detached houses in the space behind the central square and close to the green buffer area; townhouses in the lots located on the sides of the square, towards Bari and Foggia. It was as an open urban system, expandable along the three principal directions.

4.4 Incoronata – (1939)
designers: architects Giorgio Calza Bini and Roberto Nicolini.

The plan has characteristics similar to Daunilia, due to the relationship with the local roads, the presence of the green buffer area and the residential buildings, based on a succession of detached and terraced houses. The central plaza, which housed

all the usual public buildings, was marked by the staggered entrances of the roads; the tower of the Casa del Fascio and the facade of the church were the elements that visually closed the main streets. The novelty was represented by the position of the Town Hall, not aligned with the streets, as if to play a pivotal role in the street network. It was a cubic volume, with a porch basement with parabolic arches, carved into heavy masonry walls.

4.5 Segezia – (1939)
designer: architect Concezio Petrucci.

Although proposing a system of orthogonal streets based on the roman Cardo-Decumanus model, which created the form of a Greek cross, open and potentially expandable, the plan replaces the quadrangular mesh of a Roman castrum in a herringbone pattern, based on the main and connecting paths (Ortensi, 1941). The two arms of the cross oriented almost north-south included semi-detached houses, while the other two involved a system of terraced houses.
The square, which re-proposed the theme of paths with staggered entrances, was dominated by the steeple of the church, the only vertical element of the composition.

4.6 The rural towns of Salento

The most important centers built in the Salento were those of Frigule (1926), Borgo Piave (1922) and Borgo Grappa (1926); these were joined by those created by private initiative, such as Cardigliano (1928), Villaggio Montegrappa (1938) and Villaggio Starace (1938). These were small towns, taking existing territorial patterns as a basis for their plan, and where the church building was the centerpiece of the composition. They included a series of detached houses with large plots of land, distributed along the main road, with a central square housing the common facilities. However, two distinct settlement patterns can be recognized: the first, open, almost a garden city, as in Borgo Piave, based on a "T" originated from two main routes; the second one, more closed, as in the case of Frigule, shut tight and U-shaped around the central square, clamped by the existing farm and by the volume of the new church.

4.7 Marconia (1938)
designer: architect Konyedic

The Lucan village, built near Pisticci, was initially planned as a center of aviation for the defense of the nearby military base at Taranto. Subsequently it was decided to allocate it to the settlement of the Camicie Nere to control the inmates who were destined to political exile from 1926.
An orthogonal grid of streets was adopted, which took as its main path the road that joined town of Pisticci to the sea.
As in other examples, the public buildings were located in the central square: the Casa del Fascio, with a high tower, and the church, placed in front, in an offset position, as if to reaffirm the political role of the village. The central space was closed on the remaining sides, with long arched porticoes.

Bibliography

Armillotta, F., *Segezia e le borgate rurali in età fascista*. In *Le nuove Provincie del fascismo. Architetture per le città capoluogo*. Pescara: Archivio di Stato, (2001).

Cappiello, D., *La bonifica del Materano*. Matera: B. M. G., (1970).

Carrante, A., *Aspetti della trasformazione agricola nel Tavoliere di Puglia. La conquista della terra*, 4, 25-27, (1937).

Cederna, A., *Mussolini urbanista. Roma – Bari*: Laterza, (1979).

Ciucci, G., *Gli architetti e il fascismo. Architettura e città 1922-1944*. Torino: Einaudi, (1989).

Corvaglia, E. & Scionti, M., *Il piano introvabile. Architettura ed urbanistica nella Puglia fascista*. Bari: Dedalo, (1983).

Cucciolla, A., *Vecchie Città/Città nuove. Concezio Petrucci 1926-1946*. Bari: Dedalo, (2006).

Culotta, P., Gresleri, G. & Gresleri, Gl. *Città di Fondazione e Plantatio ecclesiae*. Bologna: Editrice Compositori, (2007, Eds.).

Curato, R., *Piano generale per la bonifica del Comprensorio*. Roma: C. Colombo, (1933).

Di Crollalanza, A. *Le opere pubbliche nel primo decennio fascista*. Milano: Mondadori, (1933).

Fiore, T., *Terre di Puglia e Basilicata*. Cosenza: Pellegrini, (1968).

Ghirardo, D. & Forster, K., *I modelli delle Città di fondazione in epoca fascista*. Torino: Einaudi, (1985).

Ieva, M., *Esiti di modernità tra tradizione ed innovazione. Il caso di Borgo Loconia*. In Lenoci, L. B., Canosa. *Ricerche Storiche*. Canosa: Edizioni Pugliesi, (2007).

Mangione, F., *Le case del fascio in Italia e nelle terre d'oltremare*. Roma: Archivio di Stato, (2003).

Martinelli, R. & Nuti, L., *Le città di strapaese. La politica di fondazione nel Ventennio*. Milano: Franco Angeli, (1982).

Massaro, G., *Dai tentativi di bonifica alle città nuove*. Latina: Novecento, (2005).

Nicolini, R. & Mirabella, T., *Architetture delle città nuove*. Latina: L'Argonauta, (1989).

Ortensi, D., *Bonifica integrale del Tavoliere – Centro Comunale di Segezia*. In Ediliza Rurale. Roma: Casa Editrice Mediterranea, (1941).

Ortensi, D., *Edilizia rurale. Urbanistica di centri comunali e di borgate rurali*. Roma: Mediterranea, (1942).

Pagano, G., *Architettura rurale italiana*. Milano: Hoepli, (1936).

Pellegrini, G., *Città di fondazione italiane (1928 – 1942)*. Latina: Novecento, (2005, Ed.).

Pennacchi, A., *Viaggio per le città del duce*. Milano: Asefi, (2003).

Petraccone, C., *Le città italiane dal 1860 ad oggi.* Torino: Loescher, (1979).

Sacco, L., *Provincia di confino. La Lucania nel Ventennio fascista*. Fasano: Schena.

Scaramuzza, G., (1936), *Montegrosso. La conquista della terra*, 1, 25, (1995).

Sereni, E., *La politica agraria del regime fascista*. Milano: Feltrinelli, (1971).

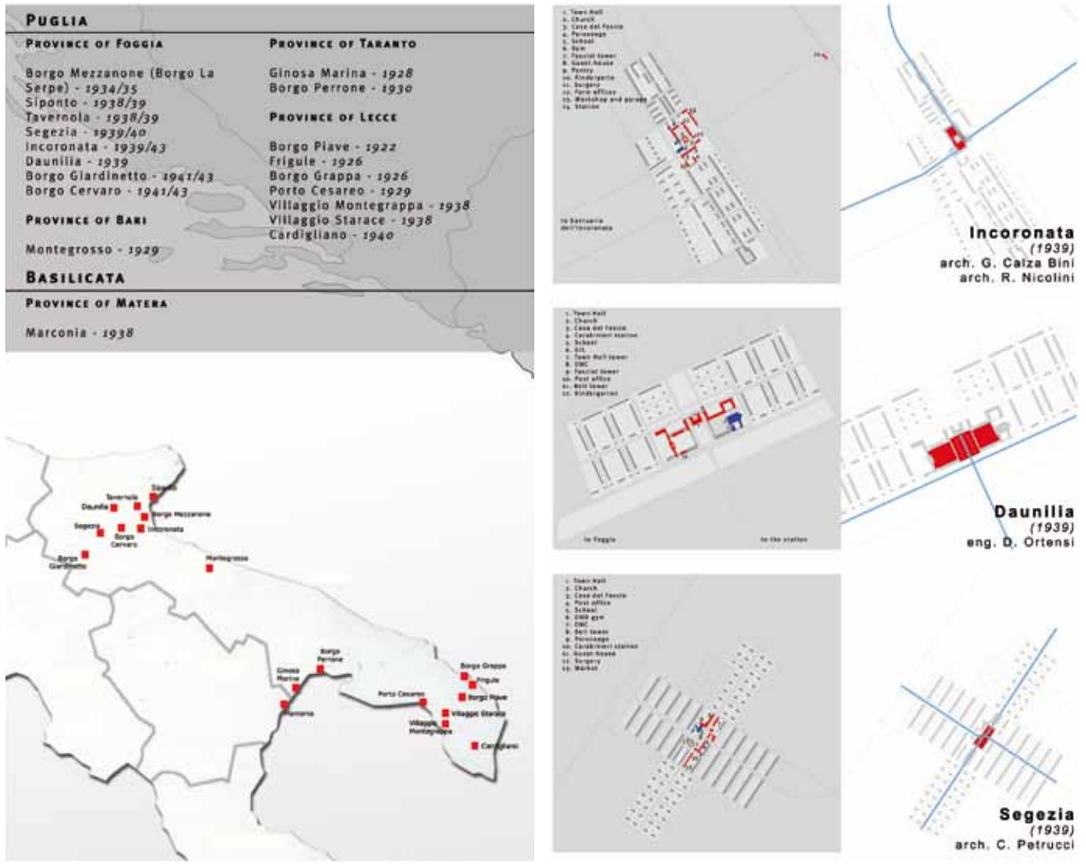
Strappa, G., *Nuove Città Mediterranee*. In Besana, R., Carli, C. F., Devoti, L. & Prisco, L. (Eds.), *Metafisica costruita. Le Città di fondazione degli anni Trenta, dall'Italia all'Oltremare*. Milano: Touring, (2002).

Todaro, U., *La bonifica del Tavoliere. L'attività bonificatrice dell'Opera. La conquista della terra*, 2, (1939).

Tramonte, R., *La bonifica integrale del Tavoliere di Puglia*. Bari: Laterza, (1935).

Figure Legends

1. New cities in Puglia and Basilicata (file name: Fittipaldi_Graziella-Scricco_Francesco1.jpeg)
2. Plan of Incoronata, Daunilia and Segezia (file name: Fittipaldi_Graziella-Scricco_Francesco2.jpeg)



Carlotta Torricelli
Politecnico di Milano, Italy

Copenhagen - Øresund - Malmö: city borders and construction of the landscape

"One might almost have wished there had been the hateful bridge"
(Maj Sjöwall and Per Wahlöö, Terroristerna, 1975)

The potential of urban design can be understood by looking at its character of permanence or its ability to accept transformation, without losing its founding principles. Today it is necessary to reflect on the different topics covered by the term "urban design". There are some paradigms which invite an interpretation comprising different concepts - city, landscape, environment, infrastructure etc. - without aiming to outline their special distinctiveness, but rather trying to consider the intersection of disciplines as the specific field of action of *composition*.
The coasts of the Øresund - the strait of water separating Denmark from Sweden - may be seen as the contraposition of two long "stage settings", where sequences of urban facts face each other. Copenhagen and Malmö are located near the wider point of the sound: two merchant harbours oriented toward the sea, but at the same time two fortresses developed in connection with the land lying behind. Since 2000 the shores have been connected by the Øresund Fixed Link. This connection shifts the centre of focus from the urban development to a wider territorial scale: every transformation is now linked to the bigger scenario of the international Øresund Region.

The paper aims to show some cases of this territorial configuration to point out how the two cities, poles of a renewed tension, mould their shapes, borders and limits[1]. Moreover, with the introduction of a new character in the middle of the strait, the construction of the waterfronts has a pivotal role; the itineraries that reach the connection point and the areas with a strategic position are distinguished by recognizable landmarks, able to build a new type of landscape: a big unique city where built signs are related to natural elements with strong visual impact. Thus the pattern of the two ancient fortresses may be interpreted as the original signs of this territorial construction, where architecture affirms itself as a synthesis of nature and culture.

In this study the aim is not to question the degree of necessity of the construction of the Øresund Link, nor to reconsider the multiple problems connected with modification of the ecosystem, already addressed in public debate. The aim is to think about the construction of a new type of landscape, in which the relationship between nature and artifice, between the character of the place and the design of the new is activated. Talking about the city and its transformations today means accepting the possibility of identifying it as a concrete fact, viewed in its nature of being subject to change. It is clear that the contemporary city is fragmented, full of contradictions and conflicts. Such a city cannot have just one image; it has many, all at the same time. Today the character of human gathering in a concentrated space is not enough to define the city, and in this sense we may agree with the consideration of Paul Ricoeur for whom the city is "first of all a matter of communication; like an enormous junction … it establishes among human beings a dense, ramified grid of relations"[2]. The sense of being a city dweller is projected now into an abstract and wider spatial context that goes beyond territorial boundaries, extending to a symbolic system on a very large scale. In this vast urban setting the most important monuments are not the symbols of power and its specific locations; the places of living of the masses, together with their rites and forms of consumption, also take on the value of *landmarks*. On the other hand, observing the entire phenomenon, one wonders if the needs of the mass population are truly the centre of the problem, or if the focus is the representation of that population constructed *ad hoc* by the so-called "experts". It is actually the plan of communication that plays a fundamental role. This is why, in the project of the Øresund Fixed Link, the construction of the metaphorical value of the intervention and its communication to the community has accompanied the project from the outset. These considerations should lead us to re-open a thorough investigation about the symbolical construction underpinning every architectural and urban design, intended as compositional actions. In that sense the main issue for the architect is to find, through the organization of figures and spaces, a common language to communicate with the citizens of a new kind of urban living.
Therefore in the branding of the Øresund Region the fixed link plays an important role. The Øresund Bridge is not just a bridge that spans from coast to coast, between Sjælland and Skåne regions. It is part of a greater link, where the highway and railway extend as a continuous band across the strait to merge with the traffic systems in Denmark and Sweden. In 1991[3] the Danish and the Swedish governments agreed on the construction of a bridge between the "twin sisters" Copenhagen and Malmö. The project for the Øresund Fixed Link came about at a time when the two cities were at an impasse with respect to urban growth, and economically stagnant. The recession of the time and the international discussion about new urban living patterns led to the development of new state structural policies. The project for the Øresund Region is a "growth-stimulating" tool inserted in a wider context of pursuit of a new identity.

At the end of 1992, the Øresund Consortium arranged a competition for the Øresund Link and six international groups were chosen to participate. The competition included the entire connection: an artificial peninsula at Kastrup, a tunnel under Drogden, an artificial island south of Saltholm and a bridge to Lernacken in Sweden. At last the ASO Group's steel and concrete bridge with a C-shaped alignment was realized[4]. The project is conceived - in its combination of technical needs and aesthetic goals - as a true device that alters the landscape, creating a new scenario from which to observe the long term from an unusual vantage point. Perception studies accompany the project, to determine speeds, angles, favoured points.
The link consists of a four-lane highway and a two-track railway. The highway and the railway are separated along the entire crossing through a two-level bridge. Four freestanding pylons - with the appearance of a monumental door floating in the water - define the centre of the bridge. Initially the project did not call for lighting of the highway on the bridge, to permit viewing of the nocturnal landscape, concentrating the lighting at the four central pylons. Later this decision was changed, in relation to an increasing expectation that the entire Øresund Region will soon constitute an active major urban area.

Starting from Copenhagen, the first response of urban design to the introduction of a new southward thrust is the expansion of the city in the artificial polder of the Amager, and in particular the project for the new urban district called Ørestad, which extends to the east of the large nature reserve of Amager Fælled,

In Copenhagen the imprint of the great ramparts of Christian IV remains as a permanent trace: the feature of the defensive works not only refers to itself, its style or its time, but to an archetype that belongs to the collective consciousness. According to that the permanence of the *Fingerplanen* of the 1947 is evident, not just because the new expansion of the city follows the path designed by the five fingers, separated by green wedges, rather because the plan describes an approach that confirms its appropriateness with the recent introduction of the Amager "extra finger". Here the new urban district Ørestad is growing: a city developed in a narrow site crossed by the new metro and intended - in the design of the master plan that won the international competition in 1995 worked out by the Danish/Finnish group ARKKI[5] - as a long and narrow garden with roads, canal and parks, where new buildings are stamped as a negative feature.
The district is divided in four different areas: Ørestad Nord, planned primarily for institutions for higher education and research related companies, housing and cultural activities (just to mention a few: the Tietgen Dormitory by Lundgaard og Tranberg and the Denmark's Radio with its new Concert Hall designed by Jean Nouvel); Amager Fælled Kvarter; Ørestad City, where international, national and regional companies and institutions are placed as well as the Bella Centre's existing buildings and a new "Arena"; Ørestad Syd, where a comprehensive plan for the area designs a continued housing development.

The numerous architectural competitions indicate ongoing ambitious goals, yet despite this, the new city district has to grapple with problems that all the major development projects face. A linear canal makes a coherent whole of the University Campus to the north, and the elevated railway and a parallel canal provide the buildings further to the south with a backbone, but in some cases the interweaving of development and landscape has been abandoned. Mention should be made, for the high level of experimentation proposed in combining housing needs, large infrastructures and visual relations with the landscape, of the project for the VM House developed by PLOT Architects (2005), and the project for Mountain Dwelling realized by BIG (Bjarke Ingles Group) in 2008. Also worthy of note is the design investigation on the production of residential buildings in the terminal portion of the Ørestad Syd, where high-density housing is assigned the task of indicating the end of the district, reconnecting it to the land and to nature. The project for the 8-Tallet building (BIG, 2010) is paradigmatic, in this sense.

Looking at the other side of the strait, the first premise for the development of Malmö is that the city's vision can be divided up into regional and local. The construction of the bridge and the renewed westward advance of the city of Malmö have reignited debate on the configuration of the Malmö waterfront. In historical terms, as in Copenhagen, the fortress and the defence walls protected the city from the sea, kept at a sort of "safe distance". Proposals have continued to pour in for many years on how to bring the city closer to the sea. After World War II the artificial peninsula of the Västra Hamnen was developed as an industrial zone. Starting from the 1997/98 the city government decided to put the International Housing Exhibition Bo01 in the Västra Hamnen and to create a new eco-district for technology and research in this gloomy anonymous space, thus generating a new urban front facing the sea[6]. The design of the open spaces (Daniapark, Sundspromenade, Scaniaplatsen and Ankapark) was the result of international competitions, and the overall quality of the design is outstanding. At the end of the 1990s the new University was set up in the strategic area of the Västra Hamnen, on the University Holmen.

Development in the city has occurred gradually in concentric rings and in connection with the arrival of the Øresund Link, connecting roads and rail networks. In Hyllie, the district placed on one City Tunnel station[7] in southwest Malmö, a new development is growing.
In general the rebirth of the city is based on the principle of definition of a new identity, no longer looking like an industrial town, moving toward the new image of a city of dynamic culture, ready to meet the challenges of sustainable growth. The Øresund Bridge forms a backdrop for this new urban scenario, and its counterpart is the sculptural figure of the tower known as the Turning Torso (completed in 2005), built by the engineer-architect Santiago Calatrava, with a height of 190 m, against a flat, linear horizon. The idea of the project is that in the new crossroads of Baltic exchange a "beacon" was needed, a true landmark that would attract attention.

Getting back to a more general level, urban growth along a line based on an artery of mobility has ancient origins, as we know. We cannot but mention the experience of the *Ciudad Lineal*, formulated by Arturo Soria y Mata starting in the years after 1880. Soria suggests the idea of a linear modern city connecting two ancient cities. In this sense the long sequence that extends from Copenhagen into the new urban district known as Ørestad, and then continues to the peninsula of Kastrup (location of the airport, and thus part of a large expansion project) and the Øresund Fixed Link, all the way to Malmö, can be interpreted as the implementation of some of these principles. Though this is a continuous vector, the sequence of the favoured itinerary appears as a true "backbone" of urban growth. Bringing this concept to its extreme development, BIG presented the Loop City Project at the Venice Architecture Biennale 2010. The project proposes to upgrade the planned light rail of Copenhagen by extending it to form a regional ring around Øresund and creating a centre-less metropolitan area surrounding a blue void[8].

Soria's reflections are also linked to considerations regarding the value of land, which progressively diminishes in lines parallel to the main artery. This reflection is a very timely one today and can be seen in all territorial situations in which a new infrastructure is inserted. The result to avoid is the race to grab the lots closest to the artery, constructing a sequence of objects that stand out more for their nature as "billboards" than for their quality as urban edifices. On this theme, we should remember the research of Robert Venturi and Denise Scott Brown, expressed in the dense critical synthesis of *Learning from Las Vegas*[9]. In Las Vegas the relationship the buildings establish with the possibility of being seen from the highway creates architecture that is anti-spatial; an architecture of communication rather than space. These considerations lead to deeper analysis of the problems connected with the theme of visual perception. The perception of movement along a road happens inside a structural order of constants: road, sky, the rhythm of street lights, lane markers, etc. Speed is the factor that determines the angle of focus with which things are observed.
We might imagine that the role assigned in the project to the mobility artery takes on, for the Øresund Region, the value of the *boulevard* in the work of Baron Haussmann in Paris in the 1800s. A device designed to rationalize circulation and transport, it produces a completely new type of urban setting to be experienced in keeping with a different aesthetic conception: speed. But the projects analyzed in this study reconcile the flow of traffic with the creation of an urban space at its margins, in which the quality of life of human beings is achieved through a careful relationship between individual living spaces and collective spaces. In this sense this is not a promotion of the "city of speed", but the construction of an urban setting with its own inner rhythm, in visual relation to a universe of high velocity, which goes on without disturbing the balance.

The assertive trajectory of the backbone passes through places and spaces that appear as leftovers in the context of urban growth. In this sense the passage of the vector of mobility also conveys social, political and economic interests into areas overlooked by the major systems, and can become a turning point for landscapes and residual spaces still awaiting configuration. One example is that of the point in which the Øresund Bridge touches down in Sweden, at Lernacken, a limestone and soil depository, now undergoing an important reconfiguration that calls not only for hospitality structures, but also for a better design of the coastline for recreation and leisure activities. The bridge separates and connects at the same time. Its curved movement divides the Øresund strait into two different portions, forming a sort of lagoon to the north, where Helsingør and Helsingborg face each other at the narrowest point. If it is true that mobility and migration are decisive phenomena for urban development, the creation of the Øresund Fixed Link has expanded the potential of a tension already in progress between the two coasts, and has given a different role to the form of the voyage, as a path through continuity, not as the passing of a boundary.
In the whole strait, the physical construction of borders and coasts plays a fundamental role in the formation of the horizon.

The conquest of the land, the very archetype of assertion of man's power in the Nordic regions, is to some extent a continuation of the "geological prologue" of the construction of these cities. But at the same time it also exists on the risky edge between construction of landscape and technological imposition of an image on nature. In such a vast, low landscape the construction of anything vertical takes on the primitive value of a *monument*, a sign visible for all, but the race to build the tallest tower should not fall into the trap of a useless "contest" of greatest technological effort. It should be part of the design of a system of territorial references and points of orientation. In this sense the construction of this territory should be intended as the creation of a widespread unique metropolitan area, oriented by a careful design, able to order the complex relation between nature and artifice and capable to define hierarchies and tensions of each figure in relation to a common backdrop, both on a concrete level and on a symbolical one.

For that reason the study of this experience creates the opportunity to reflect on the city transformations. Thus in this great workshop of ideas it is possible to recognize a field of work where the city is oriented toward the future but rooted to its memory, where the plan can affirm a human scale without losing sight of a clear design in a larger scale, where technological innovations - intended as tools and not as generative elements for the design - collaborate with the plan.

Notes

[1] This study is developed by the author within the project "Architecture to the limits", research in progress carried out by the Tutors of the Doctorate in Architectural Composition of the IUAV - University of Venice.

[2] Paul Ricoeur, *La cité est fondamentalement périssable (1991)*, in Various Authors, *Le grands entretiens du monde*, Le Monde Éditions, Paris, 1994.

[3] Worthy of note is the landscape installation "X–X" (Limham n Sweden and Tårnby Denma rk) realized by Gunilla Bandolin and Monika Gora in 1992. During the debate "to build or not to build a bridge", the aim of the installation was to focus on the locations of the bridge.

[4] The Øresund Bridge was designed by architect Georg Rotne with the ASO Group Partnership (Ove Arup and Partners, SETEC, Ginsing and Madsen, ISC).

[5] In 1994 Ørestadsselskabet arranged an international competition for a complete master plan for Ørestad and the Finnish team APRT was selected to draw up the proposal for the future master plan. After the selection, the Finnish studio, APRT, formed a joint venture with the Danish KHR Arkitekter under the name of ARKKI APS.

[6] The development of Västra Hamnen can be divided into the following main areas: the exhibition area, the trade fair area former SAAB factory with its slipway, the crane area, former aircraft factory, the Celcius area and the Universitetsholmen area.

[7] The City Tunnel is a 17-kilometre rail link in Malmö, running between Malmö Central Station and the Öresund Line.

[8] Like a bracelet around the original hand (the Fingerplanen from 1947) the loop becomes a recognizable icon for a Pan-Scandinavian Region.

[9] Robert Venturi, Denise Scott Brown, Steven Izenour, Learning from Las Vegas, The M.I.T. Press, Cambridge-London, 1972.

Bibliography

Burrascano M., *I frammenti della citta' europea: città, architettura, progetto*, Alinea Editrice, Firenze 2009.
Bjarke Engles Group, *Loop City*, «Arkitektur N», n. 8, 2010.
Cléments G., *Manifeste du Tiers paysage*, Éditions Sujet/Objet, Paris, 2004.
Croset P.A., *La riqualificazione degli spazi di risulta*, in «Casabella» special issue *The design of open spaces*, n.597-598, 1993.
Della Fontana J., *Nove cubi strallati in cielo*. HSB Turning Torso Tower in Malmö, in «Arca», n. 215, 2006.
Diedrich L., edited by, *Art and Landscape by Monika Gora*, Birkhäuser Verlag AG, Basel, 2012.
Falbe-Hansen K., Örjan Larsson, *The Øresund bridge: project development from competition to construction*, in «IABSE reports», n. 82, 1999.
Gehl J.and Gemzoe L., *Public spaces, public life: Copenhagen,* Danish Architectural press, The Royal Danish Academy of fine arts School of Architecture, Copenhagen, 2004.
Gimsing J, *The Øresund bridge: the tender project*, in «IABSE reports», n.82, 1999.
Graham T., *Towards the sustainable city*, in «Town and Country Planning», n. 3, 2009.
Gravagnuolo B., *Le città-porto dal Baltico all'Atlantico*, in ID., *Metamorfosi delle città europee all'alba del XXI secolo*, CLEAN Edizioni, Napoli 2011.
Gromholt S., *Hotel Lernacken*, in «A10», n. 22, 2008.
Hahne A., *The House, Bo01 expo, Malmö*, in «Quaderns», n. 231, 2001.
Hallemar D., et. el., *Bo01 area in Malmo revisited - ten years later*, in «Arkitektur (Stockholm)», n. 5, 2011.
Holmfeld K. D., edited by, *Copenhagen Spaces, Arkitektens Forlag*, Copenhagen, 1997.
Hospers G.J., *Branding places - Lessons from the Øresund Region*, in «Town and Country Planning», n.5, 2005.
Hoyer S., *The Øresund Link. Gateway, monument, time and light*, in «Arkitektur DK», n. 6, 2000.
Juul H. and Frost Flemming, *A large-scale strategy for Malmö*, in «Topos», n.34, 2001.
Keiding M. et al., *VM Housing in Ørestad*, in «Arkitektur DK», n. 1, 2006.
Keiding M. et al., *The Mountain in Ørestad*, in «Arkitektur DK», n. 7, 2008.
Keiding M. et al., *Housing and business scheme. 8-Tallet, Copenhagen*, in «Arkitektur DK», n. 1, 2011.
Kvorning J., *Rivalry between Copenhagen's port areas and Ørestad*, in «Topos», n.34, 2001.
Lavedan P., Plouin R., Hugueney J., Auzelle R., *Il Barone Haussmann. Prefetto della Senna 1853-1870*, Il Saggiatore, Milano, 1978.
Lind O. and Lund A., *Copenhagen Architecture Guide,* Arkitektens Forlag, Copenhagen, 2001.
Lund A., *Guide to Danish landscape architecture, 1000-1996*, Arkitektens Forlag, Copenhagen, 1997.
Loriers M.C., *Turning Torso dwelling in Malmö*, in «Techniques & Architecture», n. 471, 2004.
Lynch K., *The image of the city*, The MIT Press, Cambridge, Massachusetts - London, 1960.
Manzo E., *Architettura Danese Contemporanea*, CLEAN, Napoli, 2004.
Olsson M., Rosberg G., Bisgaard H., *The Øresund Region: Malmö - København*, in «Arkitektur DK», n. 4, 2005.
Peebles G., *Imagining Utopia, Constructing Oresund: From the Nation-State to the Region*, in ID., The euro and its rivals, currency and the construction of a transnational city, Indiana University Press, Bloomington, Indiana, 2011.
Persson A., *Malmö moves closer to the sea*, in «Topos», n.41, 2002.
Ricoeur P., *La cité est fondamentalement périssable (1991)*, in Various Authors, *Le grands entretiens du monde*, Le Monde Éditions, Paris, 1994.
Rotne G., *Øresundsbroen*, in «Arkitektur DK», n. 6, 2000.
Rowe C. and Koetter F., *Collage City*, The MIT Press, Cambridge, Massachussets, and London, England, 1978.
Rundgren K., *Vastra Hamnens Skola, Malmö*, in «Arkitektur (Stockholm)», n. 3, 2011.
Rykwert J., *The Seduction of Place. The history and Future of the City*, Pantheon Books, New York, 2000.
Secchi B., *Ørestad*, in «Casabella», n. 617, 1994.
Semerani L., *L'esperienza del simbolo. Lezioni di Teoria e Tecnica della Progettazione Architettonica*, CLEAN Edizioni, Napoli, 2007.
Simmel G., *La metropoli e la vita dello spirito (1903)*,Italian translation by P. Jedlowski and R.Siebert, Armando, Roma, 1995.
Soria y Mata A., *La città lineare*, edited by George R. Collins e Carlos Flores, il Saggiatore, Milano, 1968.
Vegetti M., edited by, *Filosofie della metropoli. Spazio, potere, architettura, nel pensiero del Novecento*, Carocci, Roma 2009.
Venturi R., Scott Brown D., Izenour S., *Learning from Las Vegas*, The MIT Press, Cambridge, Massachusetts - London, 1972.
Weibull J., Wichmann Matthiessen C., Nordstrom L. and Lauring P., *Öresund, past, present and future*, Corona AB and Norden Publishing House, Malmö, 1993.
Various Authors, *Øresundregionen*, in «Arkitekten (Copenhagen)», n. 7, 1999.
Various Authors, *Øresund. Planning the Øresund Region*, special issue «Arkitektur (Stockholm)», n.4, 2007.

Legenda

Torricelli_Carlotta.1.jpg
Carlotta Torricelli, Copenhagen - Øresund - Malmö, Collage.
8000 years ago, at the end of the Ice Age, Denmark and Sweden were separated by water. 360 years ago Øresund strait became the border between the two countries. With the opening of the Øresund Fixed Link Denmark and Sweden are once again connected.

Torricelli_Carlotta.2.jpg
The Øresund Fixed Link from space. Courtesy of NASA.

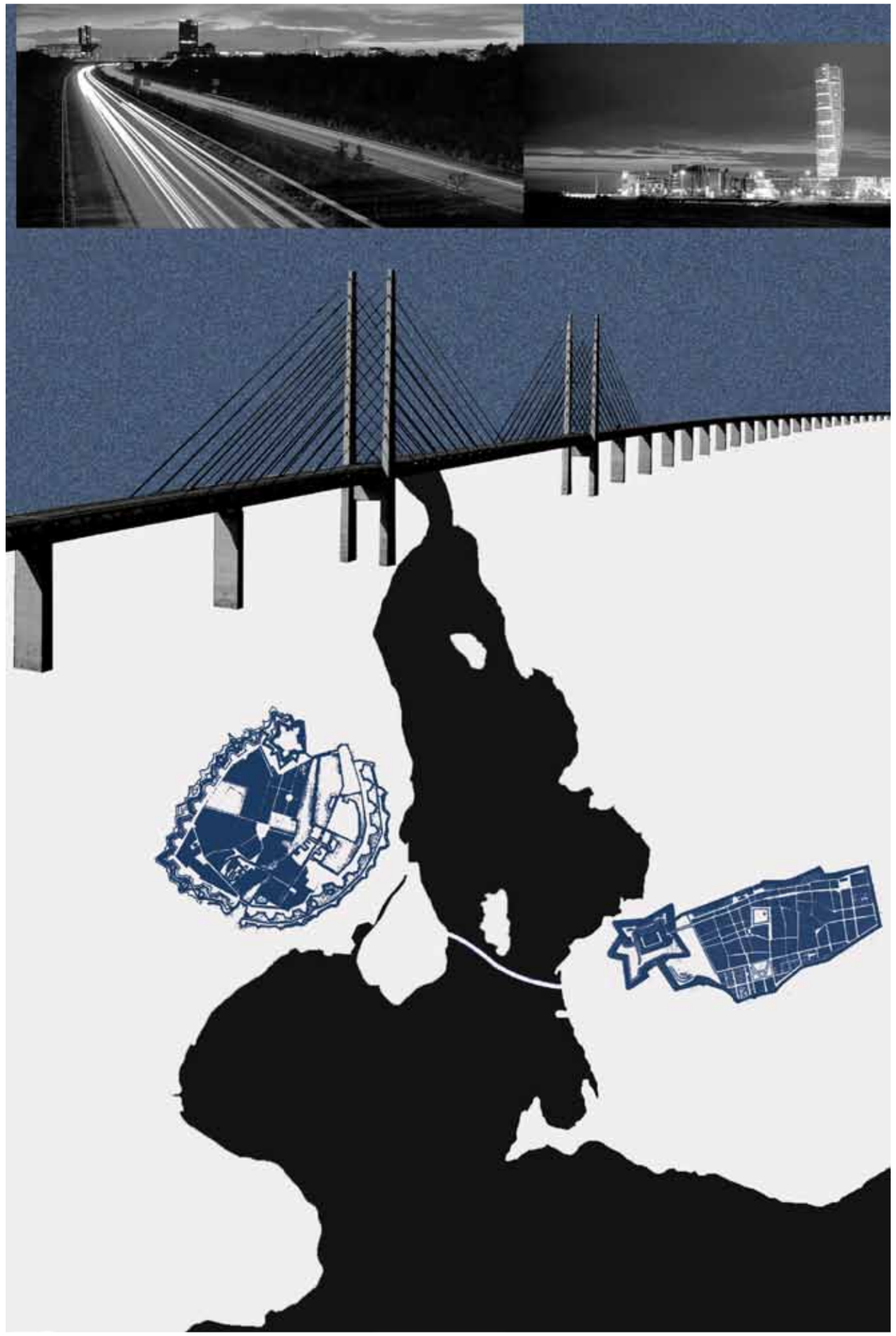
Torricelli_Carlotta.3.jpg
Gunilla Bandolin and Monika Gora, landscape installation 'X-X' - Limhamn and Kastrup,1992. Courtesy of Monika Gora.

Torricelli_Carlotta.4.jpg
BIG (Bjarke Ingels Group), Loop City, Exhibition at Venice Architecture Biennale 2010. Courtesy of BIG.

Torricelli_Carlotta.5.jpg
The developing skyline of Ørestad, author: Troels Dejgaard Hansen, Copenhagen, 2010.

Torricelli_Carlotta.6.jpg
Turning Torso and Västra Hamnen by night, author: Bjaglin on Flickr, Malmö, 2005.

Torricelli_Carlotta.7.jpg
The Øresund Bridge. Courtesy of Pierre Mens/Øresundsbron.



Ege Uluca Tumer - Elif Mihcioglu Bilgi
Istanbul Kultur University, Turkey

Westernization Effects on the Planning and Architectural Approaches in Historic Commercial Center of Kadikoy between Late 19th and Early 20th Centuries

Western Effects in Urban Legislation and Planning in 19th century in Ottoman Empire

The most effective factor on urban transformation in Ottoman Empire, particularly in Istanbul, was devastating fires of 19th century[1]. After seventeenth century, as a result of increasing population and density, the both the number and the effects of the fires increased through time. After the Cibali Fire of 1633, there have been recorded 109 extensive fires until 1839 and 229 fires between 1853 and 1906[2]. Especially in 19th century the fires became more catastrophic, especially the fire of 1854, resulting with the loss of 740 houses and the fire of 1864, resulting with the loss of 2910 houses[3]. Highly destructive fires, following one another, forced dignitaries to take precautions against fire in urban level. The precautions against fire coincided with the political thresholds of the Ottoman Empire. New regulations and legislations let the re-planning of large lands after fires, and the re-planned areas became more resistant to fires. The statement Edmondo de Amicis, famous French traveler and writer of the book 'Constantinople' that was published in 1877, indicating the widespread belief that the 'government starts fires as a way of widening the streets', explains how the use of emptied fire areas for the benefit of a better planning by the government was evaluated by the society[4]. The expression of Cemil Pasha, the mayor of Istanbul between 1912 and 1914[5], as '*although I was not intending to let the fire in Sultanahmet grow as argued by people, I was pleasant after the fire was over, as I found the chance for expropriation of building lots and creation of an urban square similar to Place de Concorde in Paris*' also explains the general view of elite governors of Ottoman Empire in this period[6].

After the declaration of Tanzimat Charter in 1936, westernizing reforms were extended to urban administration together with an agenda of codification, systematization, and centralized control[7]. As a result of the new understanding and reforms of Tanzimat, Istanbul, the city of fires, became the area of experiment for the installation of municipality organization and the application of nineteenth-century planning principles of the West[8]. Mustafa Resit Pasa, who had diplomatic missions to Paris, Vienna and London and was one of the authors of Tanzimat Charter, was an admirer of European cities and was seeking to make the Ottoman capital meet the standards of these cities and advocated regularization of streets by applying geometrical rules (kevaid-i hendese)[9]. He also argued that the conversion of timber structures to stone or brick masonry (kagir) can help the prevention of fires[10]. The first legislation, 1939 Tanzimat Ilmuhaberi, has brought provisions on the minimum width and classification of roads, prohibition of dead-end streets, limitation of the construction of timber buildings, planning the street network according to geometrical rules, creation of urban squares where possible and can be assumed that was mainly based on the solutions for fire prevention[11]. This written document by Osman Nuri Bey, which was the first urban planning report to be announced in Ottoman Empire, obviously had relations with the planning approaches in Europe, in promoting geometric planning, classification or width limitation of the roads and creation of urban squares.

Six major regulations followed this first document of urban planning of 1839 in 1848, 1858, 1863, 1875, 1877 and 1882. The 1848 Building Regulation, the 1858 Regulations on Streets, the 1863 Street and Building Regulation, the 1875 Regulation on Construction Methods in Istanbul, the 1877 Istanbul Municipal Law, and the 1882 Building Law were following the main ideas of the first planning report of 1839[12]. In 1848 Building Regulation, expropriation, building licenses, construction audits, the width of roads and streets and building heights had been considered as subjects of regulations for the first time. Besides the aim of fire prevention in this regulation, the principle of obtaining equality for the nations of the empire in Tanzimat Charter, can be easily discerned in regulations[13].

Urban Development of Kadikoy Center after the improvements in public transportation

Kadikoy, as it can be seen easily in the engravings or maps before mid 19th century (Fig. 1) was a quite small fisherman village[14]. Although it is known that there were summer mansions and palaces of the Ottoman sultan and governors[15], they were distributed in vast lands and were not a part of urban fabric. In early 19th century, the fields between Uskudar and Kadikoy became popular as *mesire*[16]. Haydarpasa Mesiresi, around the old Kavak Palace and in the place of Haydarpasa Train Station area, and Kusdili Mesiresi, the field on the east of Haydarpasa Mesiresi, were among the popular mesires of Istanbul in 19th century[17]. Besides the increase in the population of the city from the first quarter to the end of the 19th century[18], the improvement of transportation to the European side of the city and to Anatolia caused a rapid transformation of this small fisherman town in this period. One year after the establishment of the regular steam ferry services between the European and Asian shores of the Bosphorus in 1850, a maritime transport company was established by members of the ruling company, high-ranking bureaucrats and Galata bankers[19]. In 1873, the main station of 91 kilometer long Haydarpasa - Izmit railroad and its annexes were put into service[20] and Kadikoy had a rapid development in the last quarter of 19th century after the establishment of Anatolian railway[21]. After the development of maritime transport and railroad, the construction of Haydarpasa Port was achieved between 1899 and 1903. All these developments caused a change in the status of Kadikoy and the Marmara coasts on Asian Side of Istanbul[22].

The effects of the in accessibility of Kadikoy can be easily read in its enlargement in a few decades at the end of the century. If we compare the maps of Istanbul from the beginning to the end of the 18th we can easily figure out the transformation of this small fisherman village to an urban area. When we compare Nurnberg Map of 1764 (Fig. 1) and Kauffer's map of early 19th century (Fig. 2), we don't see a remarkable change in the borders. Even in Stople's map of 1866, the change is not considerable (Fig. 3.). On the other hand, in Bradshaw's map of 1889, the extension towards south-west can easily be noticed (4). However, it is obvious that urban growth is much more rapid in coming 50 years, when the Goad's insurance map of 1906 (Fig. 5) and Jacques Pervitich's map (Fig. 6) of 1937-38 are considered. The Kadikoy peninsula, which was highly green in Stolpe's map of 1866 and even Bradshaw's map of 1889, had transformed to a densely built area in 50 years. In the map of 1934, it can be noticed that, the urban area had became continuous from Uskudar to the west coasts along Marmara, except for the old Haydarpasa Mesiresi, where the railroads and station building was located (Fig. 7).

The Architectural and Urban Characteristics of the residential/commercial buildings from the late 19th - early 20th centuries in Kadikoy

As indicated before, the Kadikoy Fire of 1856/ 1860 was a *turning* point for Kadikoy Center, where 250 buildings were lost during this fire[23]. Kadikoy was re-planned doe to a grid-iron plan like the other fire areas. Linear and 8-10m width roads were opened and piazzas were located at crossroads by chamfering the corners as it was done by Luigi Stocari in Aksaray after the fire of 1856. The comment of an European traveler short after the Kadikoy fire is worthy of note, as 'Kadikoy, which was completely burnt short time ago, is now being built just like a European town and visibly becoming a favorite neighborhood in Istanbul, where peoples of all nations are accommodating[24].

The building material and technology was very much differentiated according to the building types in Istanbul during Ottoman Period. Almost all the monuments and public buildings were masonry, while all the residential buildings were timber frame constructions. Even the palaces of the members of royal family along the Bosphorus were timber frame buildings before mid 19th century[25]. Merely, the palaces of sultan and some viziers were masonry constructions. After the declaration of the Tanzimat, a campaign again the timber structure has started as indicated above. In spite of the efforts to prevent use of timber in building construction, it continued in varying levels. In 1848 Ebniye Nizamnamesi, the masonry construction were classified as '*tam kagir*', where the beams and roofs are iron and cooper, and '*nim kagir*', where the beams and roofs are wooden[26].
In Kadikoy Center, the use of brick masonry, especially in load-bearing walls, was very widespread (Fig. 5). As it can be seen in the Goad's map, less than one third of the buildings were timber frame, and most of the timber frame buildings had fire walls in between. So, transformation to masonry was very successful in the area. After a closer inspection in the buildings, it was found that the floors between basements and ground floors were 'volta doseme'[27], while the upper floors, roofs and inner walls are timber (Fig. 8) in the area. The brick exterior walls were mostly has artificial stone facing as in Pera and Galata, or plaster with the neo-classical, neo-baroque, art nouveau and art deco style architectural details from the western world on top of the coating (Fig. 9). The variety of the architectural details in Kadikoy was a result of cosmopolitan character of the neighborhood, which can be easily figured out from the variety of the religious buildings and schools in the area (Fig. 10).

In the re-planned fire areas, increasing the width of the roads and opening up the dead-end streets was a principle, both in regulations and in practice. This approach caused a decrease in the size of building lots and also a considerable decrease in the size of the gardens. The traditional concept of courtyard in Ottoman house was transformed into the backyard garden through 19th century. The buildings were mostly planned to be perpendicular to the streets and the backyards of two building rows were adjacently placed as the buildings. In Kadikoy, the planning after the fire did not let the emergence of courtyards, as can be seen in the insurance maps of Goad, but most of the buildings had a backyard courtyard, although there were exceptions (Fig. 11). Geometrical or grid iron planning and adjacent building order was widely preferred in re-planned fire areas. This planning approach caused the emergence of row house typology in Istanbul and in many other towns and cities. Row houses, which were widely preferred in western countries and acquired a predominant importance in the rapid growth of cities during the early industrial age[28], was introduced into Ottoman architecture towards the second half of 19th century, as a part of the diffusion of Western cultural patterns into Ottoman Empire[29].

Row housing typology, which was mostly used by Muslim and non-Muslim merchants, tradesmen, artisans and small and middle bureaucrats of Istanbul, was very different from the traditional Istanbul House[30]. The new development areas, fire areas, foundations' (vakifs) development projects were the places where row houses were preferred[31]. The location of the row houses in Istanbul are mostly in the neighborhoods where minorities used to live like Fener, Balat, Kumkapi, Gedikpasa, Ortakoy, Moda, Kadikoy and Yeldegirmeni[32]. Like the change in privacy in urban fabric, the hierarchy upon privacy was also changed in this building typology. The services and private rooms were located at the back side of these houses and the hierarchy of privacy was occurred horizontally, opposed to the hierarchy of privacy in traditional houses, which used to occur vertically[33].
Row housing typology was widely used in Kadikoy Center (Fig. 12). Some parts of these rows still exist. The settlement character of the buildings is perpendicular to the street and adjacent to each other. The size of the green areas at backyards varies in different blocks. The service spaces of the buildings are at the back sides of the buildings. Most of them have basements and three floors, and in some cases, an attic and a terrace on the top.

The introduction of separate commercial stores into the area is also noticeable (Fig. 13). In Ottoman tradition, the commercial districts used to be separate from the residential areas. Furthermore, there have been used special kinds of commercial buildings in all the towns and cities like *khans*, *bedestens* and *arastas*. In 19th century, especially in Pera, more western type commercial buildings like passages were also introduced. In Kadikoy Center, which was comparatively more modest than the main commercial centers of Istanbul, we find out a more modest city center fabric with smaller shop buildings, originally designed as commercial building (Fig. 13). Most of the houses in the area have separate entrances to their ground floors, which are slightly below the ground and to first floor. Most of them seem like originally planned both for commercial and residential use. However, it is not easy to understand their original use exactly, their organization is proper for a dual use. In his study, Davis states that this kind of space organization in adjacent buildings, perpendicular to the street was widespread from the 16th to 18th centuries in Amsterdam, London and Rome and eventually diminished in 18th century[34]. The Kadikoy examples, which are very similar to the examples presented by Davis, are rather late comparing. He emphasizes that the lots are narrow, commercial frontage is maximized, evidences of buildings from the three cities with separate close to the street, or deep into the store are the peculiarities of some buildings in Kadikoy too (Fig. 14)[35]. He also states that there is an ambiguity of use of the original use of front room on the ground floor in most of the cases as it is in Kadikoy[36].
The restrictions on the projections in 1882 Building Law[37] caused standardization in the depth and width of projections and a repetition of a very similar element on the building façades, which used to be very before. The projections which had varieties before are very standardized in Kadikoy Center and have a repetition in street rows (Fig. 15).

Conclusion

Kadikoy, which was a fisherman village surrounded by agricultural lands in the mid of 19th century, had rapidly gained an urban and center character and become a center for the smaller neighborhoods[38], settled around train stations, after being more accessible by new transportation systems in the city. Kadikoy Center, although not comparable with Pera, Galata and Eminonu, where various khans and passages were located, had been transformed to a comparatively dense urban fabric The grid-iron planning that we see in other fire areas and new developing areas in 19th century, road classification, creation of piazzas, which are mostly lost due to widening of the roads in 20th century European side examples, and parks are the urban characteristics that were introduced to Kadikoy in 19th century due to the effects of Westernization.

The high rate of masonry buildings, as the regulations insisted on and the row house typology are also the results of the regulations under the effects of westernization. The use of backyard garden instead of a courtyard, the use of the firewalls between timber buildings, the mixed use of commercial and residential, single commercial buildings, the neo-classical, neo-baroque or art nouveau architectural detailing vocabulary, change of hierarchy of privacy both in streets and buildings are westernized architectural characteristics that should be reviewed in Kadikoy Center.

Kadikoy under the influence of new urban regulations, put into practice as a result of the fires and westernization efforts of Ottoman elites, and its multicultural community, comprised of Turks, Greeks, Armenians, Jews and Levantines, had gained a very much westernized character at the end of 19th century. On the other hand, as a result of being out of the central core of the city, it was not affected from the planning practices of 20th century as much of the neighborhoods in historic peninsula and Galata. Consequently, Kadikoy Center is one of the few districts in Istanbul that the effects of Westernization can still be observed.

Notes

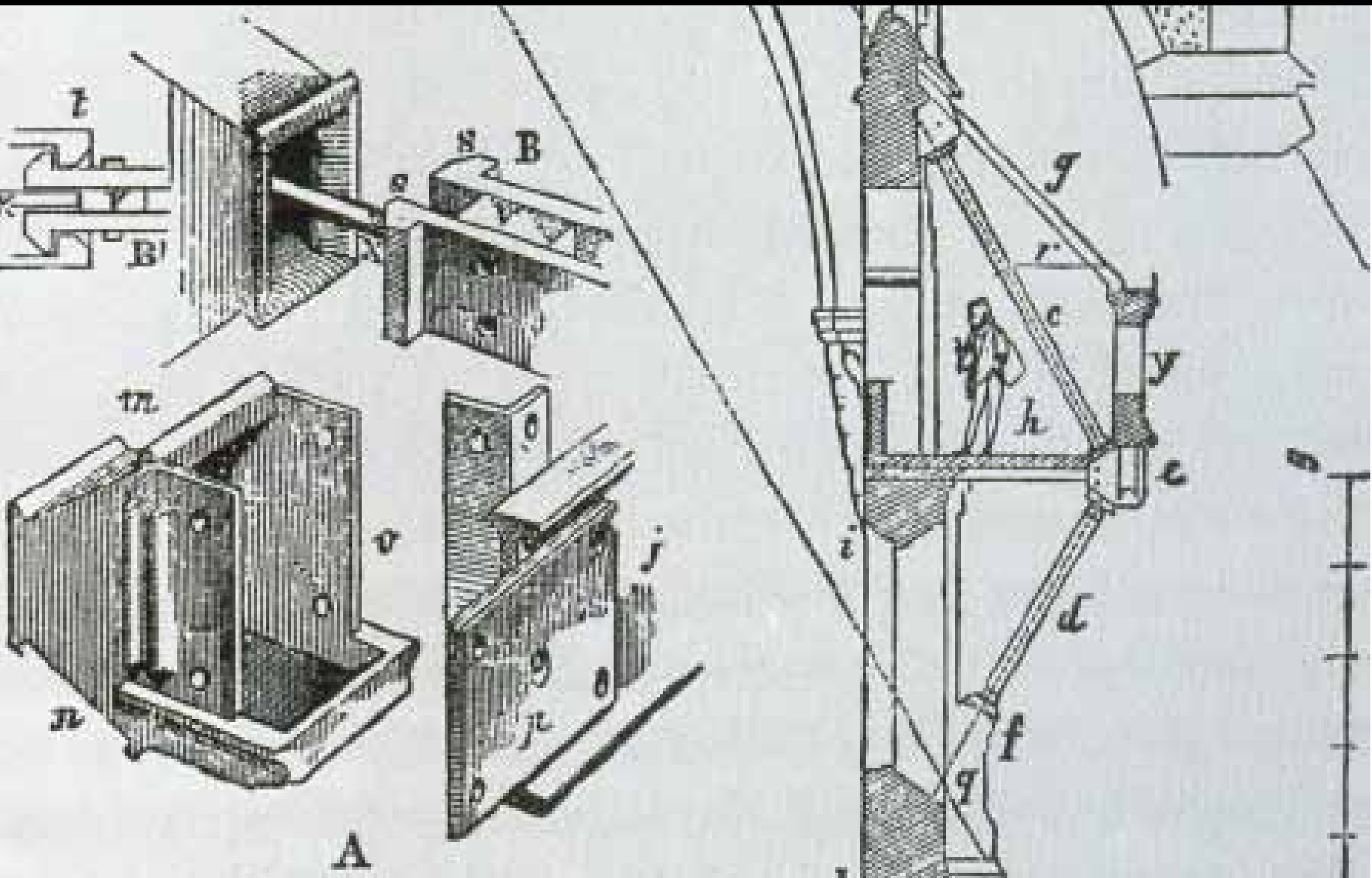
[1] Tekeli, I. (1984), *Tanzimat'tan Cumhuriyet'e Kentsel Donusum, in Tanzimat'tan gunumuze Turkiye Ansiklopedisi*, v. 4., Istanbul, p.882
[2] Celik, Z. (1986), The remaking of Istanbul: portrait of an Ottoman city in the nineteenth century, University of Washington Press, p.52-53
[3] Tekeli, I. (1984), Ibid, p.886
[4] De Amicis, E. (2010), Constantinople, translated by S. Parkin, Richmond : Oneworld Classics, p.177
[5] Ozcan, K. (2006), Tanzimat'in Kent Reformlari, in *Osmanlı Bilimi Arastırmaları*, v.7, no:2,p.173
[6] Tekeli, I. (1984), *Ibid*, p. 889-890
[7] Celik, Z. (1986), *Ibid*, p 33, 43
[8] Celik, Z. (1986), *Ibid*, p 33
[9] Celik, Z. (1986), *Ibid*, p 49
[10] Celik, Z. (1986), *Ibid*, p.50
[11] Ozcan, K. (2006), *Ibid*, p.157; Tekeli, I. (1984), Ibid, p.885; Celik, Z. (1986), *Ibid*, p.50
[12] Celik, Z. (1986), *Ibid*, p.51
[13] Tekeli, I. (1984), *Ibid*, p.885
[14] Akbulut, M. R. (1993), 'Kadikoy' in *Dunden Bugune istanbul ansiklopedisi*, v.4, Istanbul, p.332
[15] Kuban, D. (2000), Bir Kent Tarihi, Bizantion, Konstantinopolis, Istanbul, Tarih Vakfi Yurt Yayinlari, p.258
[16] Mesires, large fields along Bosphorus and Golden Horn that were used by public for various leisure activities, became widely popular in Istanbul throughout 19th century.
[17] Goktas, U. (1993), 'Mesireler', in *Dunden Bugune istanbul ansiklopedisi*, v.5, Istanbul, p. 408
[18] Toprak, Z.(1993), 'Nufus', in *Dunden Bugune istanbul ansiklopedisi*, v.6, Istanbul, 109-110
[19] Gul, M. (2009), The Emergence of Modern Istanbul, Transformation and Modernisation of a City, Tauris Academic Studies, p.53
[20] Gul, M. (2009), *Ibid*, p.54
[21] Akbulut, M. R. (1993), Ibid, p.334; Monceau, N. (Ed.)(2010), Istanbul: Histoire, promenades, anthologie et dictionnaire, Paris: Laffont, p.1160
[22] Kuban, D. (2000), *Ibid*, p.361
[23] Akbulut, M. R. (1993), *Ibid*, p.333
[24] Akbulut, M. R. (1993), *Ibid*, p.333
[25] For a detailed study on timber palaces along Bosphorus see 'Kuban, D (2001), *Kaybolan Kent Hayalleri, Ahsap Saraylar, YEM Yayinlari, Istanbul*'
[26] Celik, Z. (1986), *Ibid*, p.52
[27] Volta Doseme is a kind of a vaulted floor made by iron I beams, with brick vaults in between, mostly used in 19th century buildings of Istanbul and Ottoman Empire.
[28] Alexander, R.L. (1975), R.L. (1975), Baltimore Row houses of the Early Nineteenth Century, in *American Studies*, Vol. 16, No. 2, p.65
[29] Batur, A; Fersan, N.; Yucel, A. (1980), Reuse of Nineteenth Century Rowhouses in Istanbul, in Conservation as *Cultural Survival*, Renata Holod (ed). Philadelphia: The Aga Khan Award for Architecture, p.61, 62
[30] Sey, Y. (1993), 'Konut', in *Dunden Bugune istanbul ansiklopedisi*, v.5, Istanbul, p.64
[31] Batur, A, 'Akaretler', in *Dunden Bugune istanbul ansiklopedisi*, v.1, Istanbul, 149
[32] http://archnet.org/library/sites/one-site.jsp?site_id=5087 (accessed on 10th of March, 2012)
[33] http://archnet.org/library/sites/one-site.jsp?site_id=5087
[34] Davis, H. (2008), Architecture and the Economic Life of Shop/ Houses:A Comparative Study of Amsterdam, London and Rome, in IXth International Conference on Urban History: Comparative History of European Cities, 27th - 30th August 2008, Lyon, CD, p.1, 9
[35] Davis, H. (2008), *Ibid*, p.9
[36] Davis, H. (2008), *Ibid*, p.5
[37] Ozcan, K. (2006), *Ibid*, p.171
[38] Giz, A. (1998), Bir Zamanlar Kadikoy, Iletisim Yayinlari, Istanbul, p.35

Bibliography

Akbulut, M. R., 'Kadikoy' in *Dunden Bugune istanbul ansiklopedisi*, v.4, Istanbul, 1993.
Anonym, *Istanbul Sehir Rehberi*, Matbaacilik ve Nesriyat Turk A.S, 1934.
Alexander, R.L., *Baltimore Row houses of the Early Nineteenth Century*, in American Studies, Vol. 16, No. 2, 1975.
Batur, A; Fersan, N.; Yucel, A., *Reuse of Nineteenth Century Rowhouses in Istanbul, 1980*, in Conservation as Batur, A, 'Akaretler', in *Dunden Bugune istanbul ansiklopedisi*, v.1, Istanbul *Cultural Survival*, Renata Holod (ed). Philadelphia: The Aga Khan Award for Architecture, 1993.
Celik, Z., *The remaking of Istanbul: portrait of an Ottoman city in the nineteenth century*, University of Washington Press, 1986.
Davis, H., *Architecture and the Economic Life of Shop/ Houses: A Comparative Study of Amsterdam, London and Rome*, in IXth International Conference on Urban History: Comparative History of European Cities, 27th - 30th August 2008, Lyon, CD, 2008.
De Amicis, E., *Constantinople*, translated by S. Parkin, Richmond: Oneworld Classics, 2010.
Giz, A., *Bir Zamanlar Kadikoy*, Iletisim Yayinlari, Istanbul, 1998.
Goktas, U., 'Mesireler', in *Dunden Bugune istanbul ansiklopedisi*, v.5, Istanbul, 1993.
Gul, M., *The Emergence of Modern Istanbul, Transformation and Modernisation of a City*, Tauris Academic Studies, 2009.
Kuban, D., *Bir Kent Tarihi, Bizantion, Konstantinopolis*, Tarih Vakfi Yurt Yayinlari, Istanbul, 2000.
Monceau, N. (Ed.), *Istanbul: Histoire, promenades, anthologie et dictionnaire*, Paris: Laffont, 2010.
Ozcan, K., *Tanzimat'in Kent Reformlari*, in Osmanlı Bilimi Arastırmaları, v.7, no:2, 2006.
Sey, Y., 'Konut', in *Dunden Bugune istanbul ansiklopedisi*, v.5, Istanbul, 1993.
Tekeli, I., *Tanzimat'tan Cumhuriyet'e Kentsel Donusum*, in *Tanzimat'tan gunumuze Turkiye Ansiklopedisi, v. 4., Istanbul, 1984.*
Toprak, Z., 'Nufus', in *Dunden Bugune istanbul ansiklopedisi*, v.6, Istanbul, 1993.

List of Figures

Figure 1. Map of Istanbul, 1764 (Johan Baptist von Reben, Philipp Ferdinand Gudenus, Collection de Habillements en Turquie, Nurnberg, 1764)
Figure 2. Map of Istanbul, Early 19th century Century (Francois Kauffer, Comte de Choiseul Gouffier, Voyage Pittoresque de la Grece, 1782-1822)
Figure 3. Map of Kadikoy, 1866 (C.Stolpe, Jul. Strauby, Druck von Grack et Aron, 1866)
Figure 4. Istanbul Map, Last Quarter of 19th century (George Bradshaw (1801-1853), Broadshaw's Continental Railway Guide, 1889, Londra)
Figure 5. Map of Kadikoy, 1906 (The insurance maps of Istanbul, prepared by the company of Charles E. Goad, 1904-1906)
Figure 6. Map of Kadikoy, 1938-1939 (The insurance maps of Istanbul, prepared by Jacques, 1922-1945)
Figure 7.Map of 1934 (1934 Istanbul Sehir Rehberi)
Figure 8.The Traces of Brick Walls and Timber Beams of a Demolished Building
Figure 9. Pediments, pilasters, volute buttresses, cornices and other details of neo-classical architecture on facades
Figure 10.List of Buildings from Goad's Insurance Maps, showing the cosmopolitan character of Kadikoy in 1906
Figure 11.Map of Kadikoy Commercial Center, 1906 (The insurance maps of Istanbul, prepared by the company of Charles E. Goad, 1904-1906)
Figure 12.Row Housing
Figure 13.Commercial Buildings
Figure 14. Combined use of Commercial and Residential, Kadife Street, 16
Figure 15. Standardized Projections due to Urban Regulations


B
B'
A

Summary / Theme 3

Francesca Albani
Politecnico di Milano, Italy

Industrialisation of the Building of a Post-War Residential Estate in Milan. Specific Features, Issues, Strategies for Conservation.

Introduction

In the 1930s the issue of the industrialisation of building had already troubled "modern" architecture, from Gropius to Jean Prouvé, Buckminster Fuller and Le Corbusier. One of its characteristic features was the close association of the technical with the social and political.

By the end of World War II, from Britain to France, the political and social ideas that accompanied research into the industrialisation of building took a new turn, as an association developed between prefabrication systems and the desire to bring about a new world for humanity. Much of the stimulus and pressure came from abroad, and many undertook to ensure that "the fruit of all those ideas, timidly presented in competitions and exhibitions, should not be allowed to languish because of prejudices or difficulties that have not even been evaluated." (Rusconi Clerici,1947). In the immediate post-war years many people expect to find the solution to the housing shortage in technological and technical development and its applications. Journals increasingly published articles about the new construction systems and efforts were made to reflect on the significance of the expression "industrialization of the construction industry". But above all there were calls for a systematic series of experiments, each of which would represent the state of progress. The principal foreign examples (Albani, 2011) were the Demonstration Houses built in England at Northolt, Middlesex (Ministry of Works 1944), and the experimental Merlan housing estate at Noisy-le-Sec in France (Cahiers du CSTB, 1948). The first of these involved the construction of "prototype houses" in order to experiment with new solutions both in terms of the layout of the accommodation, on the model of the typical English house set on two floors, with the living area downstairs and bedrooms and services upstairs (Ministry of Health and Ministry of Works, 1944), and for the development of industrialized building systems. The experiment involved the selection by an inter-ministerial committee of prototypes to be built under the control of the committee itself, the Building Research Establishment and other sections of the Department of Scientific and Industrial Research. A total of thirteen homes was built, divided into two groups: the first involved the construction of homes with traditional systems, but with different layouts according to the models presented in the *Housing Manual* while the second had as its objective experimentation with new materials and building techniques and entailed the construction of houses with the same internal volume and distribution to facilitate comparisons between them. In addition, one of the houses in the first group, called the *Brick-Built Control House*, had the same plan as those in the second group, in order to provide a frame of comparison for characteristics such as comfort, time and construction costs between homes built with innovative systems and one built in brick using traditional methods.

Another example which Italy looked to after the war was the Merlan estate at Noisy-le-Sec in the Department of the Seine. The estate was a place to experiment with new ways of designing homes, materials, construction systems, facilities and installations, as well as an exhibition site from the opening of the construction site in September 1945 until the end of 1951. Within a large-scale nationwide political project, aimed at solving the housing problem in the autumn of 1945, work began on 56 prototype homes, of which 26 were built by foreign countries including Britain, Canada, the United States and Switzerland.

The aim was to try to reduce costs and times in a period when resources were scarce by relying on industrialization and prefabrication in the construction industry both for building homes and ensuring greater comfort. *The Centre Scientifique et Technique du Bâtiment* (CSTB) was required to monitor and control the experiment. A great variety of materials and techniques was used. The systems in concrete included the Coignet and Balency systems, which were also used in Italy in the following years.

Experimentation with industrial and prefabricated systems on Residential Estates in Milan (1947-1954)

In Italy, and particularly in Milan, a series of residential estates were built in the immediate post-war period inspired by an experimental and innovative approach to the urgent problems posed by post-war reconstruction. The Italian context was a vigorous one but still at an early stage as far as the design and development of industrialised systems were concerned. On the Milan estates the experiment lay in producing "prototype" houses before launching rebuilding programmes to test new layouts and distributions of volumes, new industrialised building technologies and assess building costs and timelines. The goal was to increase productivity while lowering costs and speeding up building work by standardizing the key elements that constituted a building (Gentili, 1945).

The Milan Triennale brought together all these developments (Ottava Triennale, 1948). In 1945 Piero Bottoni, as special commissioner, announced plans for the exhibition (31 May-14 September 1947) and the chosen theme, "which was essentially reconstruction solely as a social problem. It could hardly have been more timely, relevant and appropriate than at that moment." (Bottoni, 1945). "The only theme was to be housing, the most real, the most heartfelt, the most dramatic issue, a source of anxiety, desire and hope for millions of Europeans. […] It was to be the exhibition of the very first practical results of the international reconstruction of housing and to provide a trace of the guidelines to be followed in the field of construction and furnishings through craft work and industrial mass production." (Bottoni, 1951). The theme of housing was dealt with in ways closely connected with social problems and the housing problem was presented on different scales and from many different points of view. One of the themes of experimentation was unification, modulation and industrialization in building. This was the subject of two specific programs: the first of them flowed into a section of the exhibition, while the second consisted in the construction of a series of prototype homes at QT8. The second program began in an atmosphere of great enthusiasm and was perceived as an important opportunity to succeed in experimenting concretely with ideas and systems previously only studied in laboratories[2] .

A contribution of primary importance for the experimental estate came from the Ministry of Public Works, which financed 300 rooms to be built with prefabricated systems. The Ministry planned to conduct a similar experiment in Naples on the experimental Torre Ranieri housing estate because the environmental conditions and climate of Northern Italy are significantly different from those of Central-Southern Italy. A number of public bodies were involved in different aspects of this program: the Triennale as the promoter of the whole project, the Experimental Housing Centre of the Consiglio Nazionale delle Ricerche at the Milan Politecnico for the assessment of the outcome of the experiment, and the Civil Engineering Office for the direction of works. The experiment consisted in the construction of a series of houses with identical spatial characteristics and layouts in which to test new construction methods for prefabrication and industrialization of the building processes. The first phase of the experimentation saw the construction of 4 out of the 10 buildings planned in the south-west part of the estate, but only three were completed in April 1950 (Albani, 2009) and the second resumed in 1951 with the contribution of the City of Milan until 1955. In this first phase of the QT8 experimentations the focus was principally on the load-bearing structure and the discussions were concentrated on precast concrete building systems similar in form to those cast *in situ* or on the ways of industrializing the execution of works in concrete. Regarding the choice of materials, compared with Europe Italy presented a number of specifics related to the economic and social context. "It is clear that we can use very little timber, […] but it is advisable to use an abundance of local stone, tuff, pozzolana, brick, etc." (Gentili, 1945).

Italian prefabricated systems, which did not envisage the exclusive use of concrete, were presented at the exhibition at the Eighth Triennale on "Industrialization in Building". Eugenio Gentili stressed that the propaganda of autarky had influenced public opinion, though it was not difficult to see that "iron is by no means less autarkic than any other material. It should be noted that bricks and mortar require large quantities of coal for their production, and their space-to-weight ratio is such that they have a major impact on the consumption of fuel for transport". (Gentili 1945). He saw further potential for savings in the fact that Italy was littered with rubble that could be reused. Construction systems which used elements in concrete appeared from the start as the favoured choice of the Italian experimentation, despite specific issues, such as the elevated weight of the prefabricated elements, which made them difficult to transport. Hence developments led in two directions. The first entailed the prefabrication of small standardized elements to be assembled *in situ* for the construction of the load-bearing structure; the other approach was to industrialize operations on site.

fig 1- QT8 estate. Location in relation to the city center and Triennale exposition ("Edilizia moderna", 1951)
fig 2- Buildings (prototypes) created using experimental techniques in QT8, 1947-1950 ("Metron", 1951)
fig 3- Eliobeton system ("Edilizia popolare", 1955)
fig 4- Houses constructed using industrialized and prefabricated systems in QT8, 2011
fig 5- Gaburry prefabricated system ("Cantieri, 1950)
fig 6 - Poured concrete Forme Fioruzzi tested before the construtions of the building in QT8 ("Cantieri", 1949)
fig 7- Prototype built in front of Politecnico di Milano ("Cantieri", 1948)
fig 8 - Italian prefabricated system Bigontina in Duomo square ("Edilizia Moderna", 1953)

In Milan, another experiment of some interest was conducted on the "self-sufficient" Comasina estate to the north of Milan near Affori, where the Istituto Autonomo per le Case Popolari della Provincia di Milano (IACP) had decided to commission construction of a multi-storey experimental building of 54 home units (no. 87) from the Centro per la Ricerca Applicata sui Problemi dell'Edilizia Residenziale (CRAPER). Its aim was to move beyond theoretical studies to practical applications by standardizing and simplifying the operative procedures for construction and testing in a building erected in the traditional way (pillar-supported system made of reinforced concrete cast *in situ*, with brick floor slabs and brick masonry curtain walls) new window blocks and prefabricated services cores (complete with plumbing and sanitary system, wiring and heating ducts, telephone lines, gas pipes, rainwater collection and ventilation system), installed when construction was completed so as to extrapolate from the building works all the elements that could be produced off the construction site.

These experiments conducted on two sites, the Quartiere della Ottava Triennale and the Quartiere Comasina, represent some of the principal examples of Italian research into the industrialisation of architectural processes before the importation of foreign patents. In 1962 there first appeared in Italy the French systems based on concrete panels (Balency, Camus and Coignet systems) and on mixed concrete and brick panels (Barets, Fiorio and Costamagna systems). In particular, in Milan, the Gratosoglio Nord estate was built using the Camus method, the Olmi estate with the Balency method, Gallaratese Sud with the Barets and Gratosoglio with the Coignet (IACP Milan,1967).

fig 9 - Comasina estate. Experimental building 1960 ("Edilizia popolare" 1960)
fig 10- Gratoglio Sud estate built with French system Camus, 1962 (Oliveri, 1968)

Strategies for conservation

This paper aims to focus on the way these residential estates in Milan, which contain structures created using very different materials and modes of assembly, have withstood the passage of time and which kinds of strategy of conservation should be chosen for them. Decay, the need to adapt structures to the standards of comfort and housing expected by a new generation of inhabitants, on-going demolition and the small alterations continually being made to the structures raise the question of how to protect the architectural heritage represented by these prototypes – part publicly and part privately owned – which bear material witness to the initial application of prefabricated building systems that would later be employed in the construction of large parts of our cities. Precise in-depth knowledge of these structures should highlight their physical characteristics, the materials and building techniques that went into their construction, and above all the context within which they were designed and produced. This, together with careful evaluation of the nature and degree of their decay, is the necessary basis for making decisions with regard to their future. The aim is to consider how inevitable and necessary transformations might be "governed", with full recognition of the need to safeguard both the architectural characteristics of individual housing units and the overall appearance of the area as a whole.

Safeguarding a heritage as vast as that produced in the twentieth century calls for the definition of new instruments to cope with the issue. The issue of protection arises at different levels, with the emphasis on a series of limitations in the planning regulation currently in force in Italy. In the case of the QT8 in 2004 Regional Office for Cultural Assets and Landscapes (Direzione regionale per i Beni culturali e paesaggistici della Lombardia) raised the possibility of proceeding to apply the landscape constraint (vincolo paesaggistico) , as was done in similar cases such as the Feltre estate (Giambruno 2003) and the Valsesia estate, or for certain buildings of outstanding interest to proceed with a historical-relational constraint (vincolo storico-relazionale). There are numerous problems in both cases. The principal limitation of the landscape constraint is that the object of protection is only the "external appearance" of the estate, so that, without any specific regulations or a "management policy", it would not be effective in stopping the process of conversion and replacement, as in the case of the Feltre estate mentioned above. The second, protecting the individual units or at most a buffer zone around the zone, would not guarantee protection of the general layout of the estate. These are places built as part of a plan of experimentation. Sometimes a series of buildings were intentionally built all the same so as to allow for comparisons between the different experiments, and at first glance they appear featureless. Instead, by exploring the different issues affecting them and thinking about their significance, we come to realize that they represent the physical evidence of an impulse widespread in Europe in the immediate post-war period, which sought new solutions to the housing problem. Examining specific events in order to reposition these buildings, close to anonymity – "minor architecture" – in a setting that will identify them as representing an important phase in post-war Italian and European culture.

Each of them is a prototype and constitutes a true family of building systems. It is important to preserve them in terms of their overall volumes and the interplay between voids and solids, surrounding green areas and external finishes and fittings; but the conservation of these buildings should also cover other aspects. To avoid diminishing the plurality of values which the matter that constitutes them can convey, it is also important to preserve their vertical and horizontal structures, layout, and interior finishes and fittings. A landscape constraint alone would not secure all this. The solution could lie in a combination of a landscape constraint with a historical-relational constraint, an instrument intended to protect buildings representing a significant phase of Italian culture, regardless of their age and artistic value. With regard to the QT8, because of these problems, no measures were taken, so leaving alterations in the hands of individuals. In such a complex situation, the involvement of the residents is of central importance. They are the key figures in the process of protecting the neighbourhood. The most significant alterations are related to their changing needs (modifications of the internal distribution of the home units, the desire to "personalize" their homes, the need for functional and technological adjustments to meet contemporary standards). The point to ponder is which instruments can be identified to understand the changing needs of the residents and satisfy them while respecting the multi-stratified material structure of the single building and the neighbourhood. It is therefore essential for all the stakeholders (public and private owners, residents, architects, ...) to become aware of the importance of these artefacts as material evidence of the postwar period.

One of these new instruments is the "Label du Patrimoine du XX^{e} siècle" developed in France by the Ministry of Culture in 1999[3]. This is a fact-finding process, more complex than an inventory, and accompanied by cultural events. The first step in

Francesca Albani
Politecnico di Milano, Italy

the process consists of drawing up a list of buildings considered significant by a variety of criteria: representativeness of the work in relation to a series; importance of the architectural and construction program that produced it; spatial, morphological and typological innovations and the importance of the architect; the modes of reception of the work; its conservation status; its level of "authenticity". During the drafting of this list, all the players involved (local administrations, communities, the owners, architects, scholars, researchers, universities, ...) have opportunities to share knowledge and initiatives already underway, providing an opportunity to "rediscover" works and places that may seem modest, have been forgotten or associated with negative events. In France, for example, there is the case of the suburbs built in the second half of the twentieth century with their noted social problems. More than ten years after its creation, the label "Patrimoine du siècle XXe" (Goven 2009) is widely known, particularly in the area of Paris Ile-de-France. An example could be the residential estate in Pantin by Denis Honneger (Monnier 2003). The first one is an estate built with prefabricated systems (1953-1978), designed by Auguste Perret's pupil, Denis Honneger began in 1952 (Radouan, Texier 2010). It was "labellisé" in 2008.

This phase is followed by the development of appropriate instruments to convey to the individual inhabitants the methods by which these necessary changes can be carried out in compliance with the morphological and material characteristics of the single units, the buildings and the neighbourhood. There are several possible examples of strategies for governing the changes taking place with regard to parts of the city possessing architectural and urban values. One of these concerns the heritage of the Honegger brothers in Geneva. The Service Cantonal des Monuments et des Sites (SMS) of the Canton Geneva commissioned the Université de Genève[4] to carry out a research project, posing the question of how these buildings were to be conserved. The first step was to supply an account of the sites where the Honegger brothers had worked, with a complete inventory of their important works within the territory of Geneva. Fifty-two "objects" (individual buildings or *ensembles*) were identified, documented and inventoried. After that, the second topic was a critical reading and qualitative evaluation of these objects. The latter were assessed on the basis of not only architectural qualities, type, construction technologies and *ensemble* characteristics, but also their state of preservation.

They were classified in accordance with the criteria for architectural assessment applying in Geneva ("without interest", "minor interest", "interest" and "exceptional" buildings). The aim of the research was to identify recurrent issues and problems, and a series of recommendations (Graf 2010) were put forward which took account of not only the various interested parties involved, but also concerns for practical use, financial economies and preservation of the architectural heritage. A series of specific recommendations were produced for those buildings identified as "outstanding". For all the others, general recommendations were formulated aimed at preserving the principal features (spatial, constructive and material) that identify these buildings as part of the production of the Honegger brothers. The principal topics dealt with were respect for the typology of the housing, identifying any possibility of grouping apartments, for example those with a single orientation, preservation of morphology, materials, finishes of the shared areas (entrance, stairs, exteriors), regulation of enlargements or elevations, specific information regarding alterations of the facades, including diagnostics prior to alteration, respect for polychromy, and how to comply with regulatory requirements (thermal insulation, noise, safety).

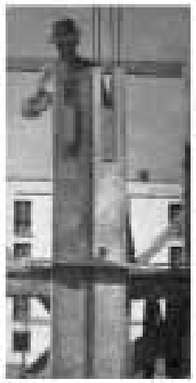
References

F. Albani, *Le prime case prefabbricate nel QT8 a Milano: le ragioni della tutela*, in C. Di Biase (a cura di), *Il degrado del calcestruzzo nell'architettura del XX secolo*, Maggioli editore, Santarcangelo di Romagna (Rn), 2009, pp. 202-227.
F. Albani, *Quale "innovazione" per la tutela dei quartieri sperimentali del dopoguerra?*, in G. Biscontin, G. Driussi, *Governare l'innovazione. Processi, strutture, materiali e tecnologie tra passato e futuro*, Arcadia Ricerche, Marghera (Venezia), 2011, pp. 39-49.
P. Bottoni, *La casa a chi lavora*, Milan, Görlich, 1945.
P. Bottoni, *Il Quartiere Sperimentale Triennale QT8*, in «Edilizia Moderna», no. 46, June 1951, p. 61.
G. Calcaprina, *L'abitazione umana: problema tecnico? Problema politico?*, in «Metron», no. 1, 1945
G. Ciribini, *Processi industriali nella costruzione*, in «Edilizia popolare», n. 33, March-April 1960, pp. 4-7.
I. Diotallevi, *Per una politica dell'abitazione*, in «Cantieri», n. 7, pp. 2-4
E. Gentili Tedeschi, *La prefabbricazione, oggi*, in «Metron», n. 3, October 1945, p. 44
I. Gardella, *Case prefabricate alla mostra del Consiglio delle Ricerche*, in «Casabella Costruzioni», n. 193, March 1946, p. 5.
M. Giannattasio, Vincolo ambientale sul QT8. Quartiere storico da salvare, in "Corriere della sera", 25 September 2004.
M.C. Giambruno, *I quartieri del "moderno" tra trasformazione e conservazione*, in M. Boriani (a cura di), La sfida del Moderno, edizioni Unicopli, Milano, 2003, pp. 93-100.
F. Goven, S. Denante., Y. Belmont, V. Gadard, F. Margo-Schwoebel, *La label Patrimoine du XXe siècle*, in «Monumental», semestriel 2, 2009, pp. 34-41.
F. Graf, *Reccomandations pour une sauvegarde. Diversité du patrimoine Honegger frères et interventions nuancées*, in F. Graf (ed), *Honneger frères. Architectes et constructeurs, 1930-1969*, Genève, 2010, pp. 214- 229.
D. Honegger, *Secteur industrialisé de Pantin (Seine), construction de 811 logements HLM*, in *Annales de l'ITBTP*, n. 79-80, July-August 1954, pp. 614-620.
Istituto Autonomo per le case popolari della provincia di Milano, *Quartiere autosufficiente Comasina, Milano 1955-1958*, Milano, 1958.
Ministry of Works, *Demonstration houses, His Majesty's Stationery Office*, London, 1944. Ministry of Health and the Ministry of Works, Housing Manual, London 1944.
P.L. Nervi, *Per gli studi e la sperimentazione nell'edilizia*, in «Metron», n. 3, October 1945, p. 36.
G. Oliveri, *Prefabbricazione o metaprogetto edilizio*, Etas Kompass, Milano, 1968.
Ottava Triennale di Milano, *Catalogo-guida*, Milan 1947
E.N. Rogers, *Uomini senza casa*, in "Domus", n. 206, 1946, p. 2
C. Rusconi Clerici, *Sperimentazione edilizia*, in «Cantieri», no. 9, September-October 1947, pp. 2-4.
La cité d'expériences de Noisy-le-Sec, in "Cahiers du Centre Scientifique et Technique du Bâtiment", no. 12, July 1948, p. 9.
Le mur portant Hubert Coignet, «Cahiers du CSTB», no.2, July 1948, p. XXXII.
Prefabbricazione anno uno, Istituto per le case popolari della provincia di Milano, quad. 10, Milano 1967.

[1] D. Lgs. 22 January 2004, n. 42e s.m.i., art 136 with amendments and additions.
[2] D. Lgs. 22 January 2004, n. 42e s.m.i., art. 10 e seguenti, c.3, lett.d with amendments and additions.
[3] The label "Patrimoine du XXe siècle" was developed on 18 June 1999 with a circular subsequently supplemented with additionals texts.
[4] The research was conducted by Franz Graf with Philippe and Yan Delemontey Grandvoinnet from january 2006 to february 2008.

1. Ot8 estate in Milan in construction, 1949.

2. South-West side of Ot8, March 2012.



3. Prototype building realized with Gaburri system in 1949, February 2012.

4. House built with Saccaro/Arbor-Same system in 1951, September 2011.

5. Houses designed by Chessa, Magistretti and Tedeschi, 1948.

6. The same houses in November 2011.

Paola Adelaide Cofano
Politecnico di Milano, Italy

Libya of the post-war reconstruction Recreation of a tradition: the Jebal Nafousah and the routes to Ghadames between the artisan and touristic economy

Introduction

This paper summarizes the beginning of a work full of promises on the *redesign of the routes and the production and touristic sites* of the future Libya, particularly on the province of Jebal Garbi, constituent of the ancient Berber tradition. The general theme envisions the conservation of the architectural and landscape heritage of this region, the redesign of its routes, the restoration of the monuments that are damaged in the recent war and the ones currently threatened by abandonment. The idea is to preserve a cultural heritage of a universal value (the indigenous and Arab cultures, the Roman and Byzantine relics, the material legacy of the Italian colonialism) to create appropriate conditions for new economies able to indemnify the non-urbanized population, and especially the Berber tribes, historically subservient to the Arab or the Western power. The renovation and development of economies compatible with the landscapes, indigenous Berber cultures and the Arabized Berbers, found in the territories of Gebal Nafousah's plateau to the south of Tripoli near the Tunisian border up to Ghadames, can be implemented through the promotion of the highly creative *artisanship* and the *cultural tourism*. Since during the Italian colonialism, there were already policies for the promotion and encouragement of tourism in the Western Libya region, this hypothesis does not result to be unprecedented. But today, the promotion of particularly vulnerable touristic areas is welded to the necessity for preservation of the entire artistic and cultural heritage of the country, threatened by political and military upheavals and future post-war reconstruction. This kind of intervention program – with its objectives and its implementation modalities - will be delegated to a later stage of research and a concrete proposal in which the sciences such as economics and urban planning, the ethnographic ones, the restoration and the architectural design will be involved.

The affiliation of Italy to Libya, the ancient Greek and Roman colony, arose with the colonial events of the early twentieth century, followed with the colonial adventure of Mussolini and the subsequent battles on African territories between the Axis and the Allies of the World War II, and finally, with the fall of the regime and the breakdown of the fascist empire until the independence of Libya in 1951.
The consecutive political and commercial relations between these two countries were strengthened after Gaddafi seized power in Libya (1969-2011), and since then have been strongly governed by our dependence on energy (gas and oil), the request for the compensations risen from the colonial period and from the Italy's geographical position in the Mediterranean as the outpost of Europe.

The story of *pre-colonial* Libya with its principal cities and regions, with different historical legacies and multiple ethnic identities, ruled for centuries by the Ottoman Empire[1] , serve to comprehend the territory and its cultural components as they have appeared to the Italian soldiers at the dawn of the Italo-Turkish War in October 1911. The division into tribes of indigenous origin (sedentary Arabized Berbers and Tuareg) and of Arab origin, found in this area from the VII century AD, emphasized a social structure organized by tribal clans and based mainly on the nomadic pastoralism and trade along the caravan routes (trade of gold and salt, animals and slaves) that, since ancient times, have linked the Western Sahel and sub-Saharan Africa to the Mediterranean Africa. After a lapse of some years, during which liberal Italy had lost control of the Libyan territories while maintaining the one in Eritrea and Somalia, with the advent of fascism in 1923 re-conquest of the country started and a new imperialist policy arose in the Mediterranean and oriental Africa. Even though the colonial process of the fascist era did not make a significant positive change in terms of economic welfare and progress of all the civil components of the Libyan country, has built, at least partially, its material face. The face which in the near future will be put further at risk by the inevitable process of reconstruction of urban areas and militarily most affected sites during the war of February-October 2011[2], also by the construction of new infrastructure (related to oil, gas, water and uranium), which will be demanded from NATO countries that have participated financially and militarily in the actions that led to the overthrow of the military regime of Gaddafi. To mend the wounds inflicted to the towns and villages by the recent war, it is necessary to dip into a guided reconstruction, the expression of a plural idea of development. Through the hasty processes of reconstruction and replacement of manufactured goods and infrastructure, and in the absence of a coherent planning of the cities and territories, the danger of an *erasure of the country's material and cultural memory* would become real. A memory constituted by the diverse and stratified millennial heritage of the population that has lived and still lives in these territories, from which we can draw on elements essential to reconstruct the scope and profundity of the Mediterranean civilization, and thus outline the evolution and the fate of our own civilization.

1. The recovery of agrarian and touristic architecture of the colonial period

The fascist regime, inheriting the East African colonies which were conquered in the Giolitti era (Somalia and Eritrea) and reconquering the Libyan territory, predisposed mainly agrarian policies, focused on capitalist colonization complemented by, what historians have called, *intensive demographic colonization.* In Libya this policy was implemented through a program of forced displacements of indigenous people - launched in 1928 by General Graziani for the will of Marshal Badoglio[3] – in conjunction with a broad campaign of agrarian immigration of tens of thousands of colonizers from Italy. This action initially undertaken by Graziani and Razza was continued as a goal of the governor Italo Balbo in the second half of the '30s, until the outbreak of World War II. If in the first phase of pre-fascist colonization - implemented by the Italians after the Treaty of Peace with Turkey (Lausanne 1912) - the infrastructural works and modernization of the northern territories close to the Libyan Sea and the main coastal cities of Tripoli, Misurata, Benghazi and Derna had commenced. Whereas, in the second phase, the great task of *transferring the land under the state ownership and of the construction of agricultural settlements* were carried out by the technical departments of the Ministry of Colonial Public Works, in which some important exponents of the twentieth-century and Rationalist movement of Italian architects were involved. Between 1933 and 1934 "The construction of these early settlements is characterized by the adoption of urban scheme of the metropolitan rural tradition"[4] or by the Italian tradition of large farmyards composed of houses, stables, barns and warehouses. Meanwhile, "The settlement (identified by the concentration around a church square, shop, warehouses, school, house of Fascism, guest house, etc.,) represents the centre of the visual reference of a very large and sparsely populated hinterland."[5]

In the Tripoli region and in the western Libya, with a total number of 38 new settlements, between 1933 and 1940, fifteen agricultural villages were built: the villages built for the Italian colonizers are named Oliveti, Bianchi, Giordani, Micca, Tahruna, Tazzoli, Corradini, Marconi and are designed by U. Di Segni, F. Fausto and G. Pellegrini; the settlement of Maamura in the vicinity of Yefren and Najma are built by the colonization entity of Libya (ECL) on much less valuable lands for the indigenous settlers.[6]
Apropos of what has occurred at the end of the colonial period, in an essay of 2011, Vittoria Capresi interrogates the destiny of agricultural villages and the urban plan of the colonized territory. Taking in consideration that there was not any linear continuity of implementation and a well-organization in the use and management of the artefacts and the lands after the abandonment or expulsion of the Italian colonists', Capresi claims that "The spaces planned during the colonialism are reduced to the human sphere of utilization and common property, without rigid rules on use given by any higher authority."[7] The territorial and urban system which had hired the "strong symbolic role on the colonists in an almost anonymous land,"[8] loses completely its potentiality and its significance in the post-colonial era, while continuing to maintain its residential character, which is naturally subservient to the material and social demands of its new inhabitants.

During the governance of Balbo (1934-1940), the archaeological excavations campaigns took up along the Mediterranean coast at the sites of Leptis Magna, Sabratha, Cyrene, Apollonia and the important missions of geological and mining, anthropological, botanical and zoological studies were launched in different parts of Libya. Regarding the archaeological surveys, Angelo Del Boca claims: "Balbo potentiates the researches at most because he believes in the touristic future of Libya. […] In this perspective should be seen his decision to renovate and render operational the wonderful theatre of Sabratha, reset by Giacomo Guidi to its former glory."[9]
The eagerness to impress upon the Quarta Sponda an economical acceleration not just in the agrarian point of view, but also and manly in the touristic-archaeological one, triggers the enhancement of the excavations in Leptis Magna and Sabratha, the organization of archaeological collections in the appointed places and the construction of the touristic facilities along the Mediterranean coast (including the so-called excavation hotels of Leptis, designed by C. E. Rava and S. Larco architects in 1928) and along the route that connects Tripoli with the oasis of Ghadames and Fezzan.

The propaganda of the regime tries to hide from the world the barbarity committed towards the Libyan people and the hardly take-off of its agricultural policies, showing the results that were obtained from the scientific campaigns organized several times during the '30s.
Through the publications of the linguist F. Beguinot on the ancient Berber language Tifinagh, the discovery of the rupestrian illustrations of the expert of prehistory P. Graziosi and the geographer E. Scarin's study of the western territories and Berber settlements, the regime intercepts to its own advantage the European "exotic" taste proposing a second route between Tripoli and Ghadames which juxtaposes the famous Greco-Roman route between Tripoli and Bengasi. This touristic strategy necessitated the construction of roads, infrastructure and hotels in the main cities and villages of Jebal Nafousah; therefore, in this framework, the Gazzelle hotel in Zilten (arch. Di Segni 1927; 1935), the Gebel hotel in Garyan (1927), the Nefusa hotel in Nalut (1928), the Rumia hotel in Yefren, the hotel Nalut in the homonym city and the Ain el Fras in Ghadames (three of them built between 1934 and1935 by F. Di Fausto with S. Gatti Casazza) were realized. Carlo Emilio Rava, among the architects working in Libya, is the one who has incredibly been impressed by the Berber architecture, considering it as influenced by the principles of Roman architecture: "The most compelling repository for the interaction between Roman and African influences were, according to Rava, the settlements constructed by the Berber populations of the pre-Saharan regions of Libya."[10]
His studies on troglodyte architecture, published in 1931 in the *Domus* magazine, determine a precise position on the identity of the regional Italian colonial architecture. This theoretical position along with his works were broadly argued among the architects of that period, between the proponents of an honest rationalism and the proponents of a new architecture declined with (volumetric and spatial) elements and decorative expressions, drawn from the local tradition.

2. The recovery of the Berber troglodyte architecture of Nafousah

The *case-study* concerns the Jebal Garbi, one of the 22 municipalities of Berber culture, dominated by the mountains of Jebal Nafousah where for millennia have existed over 100 Berber tribes that, since the seventh century, have undergone a process of Arabization. The 190 kilometers long mountain range of Jebal Nafousah, has a semicircle course with high mountains up to 1000 meters above the sea level, and separates the plateau of Gefara to the north from the plateau of Hamada-el-Hambra to the south. The Berber communities still live in the regions of Nalut, Kabaw, Jado, Quasr-el-Haj, Tarmeisa, Yafran, Garyan and Tarhuna. The cities of *Nalut* and *Gharyan*, located, respectively, 240 kilometres to the south-west and 113 kilometres to the south of Tripoli, constitute the two terminals (poles) of the urbanized Nafousah. But the main Berber city *Ghadames*, located on the west beyond the mountains of Nafousah, a few kilometres from the border of Algeria and Tunisia, was declared in 1986 as a UNESCO World Heritage Site. The oasis city, about 600 kilometres from the capital, was at the centre of the caravan routes that connected the sub-Saharan Africa and the desert to the Mediterranean coast.
The ancient Berber settlements placed in plateau of Gefara were known, up to a few decades ago, for their olive and date cultivation and the handicrafts such as the brass, ceramic and carpet weaving. The arid soils and calcareous reliefs sculpted by the wind and sand, dotted sporadically with palm trees and xerophilous plants, have always characterized these landscapes. The Berber culture, with its own Hamito-Semitic language roots (the *Tamazigh*) and its consonantal writing system (known as the Libyan-Berber or *Tifinagh*), has constructed its own settlements built with mud bricks or stone in plaster cladding.

This ancient construction tradition of the semi-desert areas is recognized as a *troglodyte architecture* that has left behind many traces in the whole Maghreb (especially in Morocco and Algeria) and in Libya in Jebal Nafousah of Tripoli and Fezzan. Isolated structures and the whole villages have for a long time been threatened by the abandonment, by improper transformations and by the haste restorations: in particular the pit-houses dug into the rocks and the so-called "castles", or the ksar qasr, fortified structures featuring as granaries, constitute the treasure of that architecture without architects to which Rudofsky is refered in his successful book of 1964. The troglodyte houses or *dammous* originate from the necessity of protection from the very hot summers and cold winters. The houses excavated in erosive incisions (canyon?) of Jebal face the hypogea courtyards with a depth of 7 to 12 meters. It is an intricate system of profound and open rooms over narrow skylights that allow the lightning and ventilation, connected by low passages and ladders to the summit of the plateau. Sometimes over the summit emerges a floor built with blocks made of stones coming from the excavation and occupied by the living rooms of the houses below. The ancient troglodyte settlement of Nalut, preserved from destruction, and still partially inhabited, presents an extraordinary collection of hypogea houses together with the facilities for the production of oil and a mosque, dating back to the pre-Islamic period and the medieval one. The fortified granaries, often circular structures, are build by superimposing rings of stone that are made of blocks cladded in lime: each ring is divided into narrow and profound cells (*gurfa*) equipped with an outer space door, to protect the oil and seeds (barley, wheat, oats, dates and other "dry" crops) from the animals and robbery. To each granary is provided a controlled access by a guard, whilst the private deposits of the households in the village are accessible from the central courtyard through the rudimentary stairways and the pegs of palm trunks.
In the case of one of the best-preserved granaries, the Quasr al-Haj, the structure is composed of three floors over the basement floor, with 144 small stores. The Nalut granary, built in 1240, has a circular form like the Quasr al-Haj, but much larger: a six floors structure that contains 300 warehouses of two different sizes, the larger sized warehouses for merchants and the smaller ones for farmers. Some scholars have tried to find in this house the typological legacy of the Roman arena. Different from the others, the granary-fortress of Kabaw has an irregular shape, with the cells connected to the ground through pegs and linked together by the air passages, balconies and wooden walkways. Seven centuries old, is still used by the villagers after a recent renovation that has raised many doubts among experts.

All the necessary information for the initiation of an urban and archaeological plan for the macro-area of Jebal Nafousah will be available just after the conclusion of the research.
One of the first tasks of this plan is to map, classify and describe all the Berber tradition settlements, the scattered and dispersed vestiges of the Roman and Byzantine archaeology, the agrarian settlements of the Italian colonization and the abandoned hotels of colonial period, together with the developed but not realized proposals for the touristic settlements of the '60s (like the projects of the Tuscan studio BRBS for some hotels in Leptis Magna, in Jado and in the pre-desert areas).[11]
The signs and the artefacts of the places along the ancient caravan routes and colonial streets, although known and widely studied, are waiting to be networked into a single eco-sustainable plan.
The plan will identify the functions of economic production, which will better meet the socio-cultural instances of population and requirements for the preservation of environment and historical territories, through tourism and education. The recovery of

traditional Berber villages – in declination or already abandoned - with the succeeding transformation into structures for agro-tourism and in living polarities of a *widespread museum system*, is conjugated with the need to rediscover and preserve the hotels and rural villages founded along the Tripoli-Gadhames route. These actions should aim an economy of a diversified accommodation facilities and a quality compatible with the pre-desert areas of Jebal and its local activities (crafts, agriculture and pastoralism).
The professional schools of arts and crafts, which were inaugurated in Tripoli during the colonial period (Arts & Crafts School, 1931; Muslin School of Indigenous, 1935) could be appropriated in urban areas of Jebal, to promote the professional restorers, technicians and craftsmen in synergy with the local and foreign companies.
If the fate of the future Libya will actually be built by all its components, in the next few years there will be observed: its scientific community can only be demanded from now on, to avoid the erasure of memory and contribute to the conservation of the Libyan cultural palimpsest, the Mediterranean's universal heritage.

That Ottoman Empire, which had conquered the Libyan territories between 1517 and 1521 dominating until 1711, re-settled in the area again in 1835, after a break of Karamanli governance (1711-1835).

The recent armed conflict has also created serious concerns through the international culture, about the danger that was threatening the archaeological sites in Libya, the artistic and cultural heritages of inestimable value. See the International Conference held in Second University of Naples (SUN), July 2011, on: "For the preservation of the cultural heritage in Libya. A Dialogue among Institutions."

Notes

[1] That Ottoman Empire, which had conquered the Lybian terrories between 1517-1521 dominating until 1711, re-settled in the area again in 1835, after a break of Karamanli governance (1711-1835).

[2]The recent armed conflict has also created serious concerns through the international culture, about the danger that was threatening the archeological sites in Lybia, the artistic and cultural heritage of inestimable value. See the International Conference held in Second University of Naples (SUN), july 2011, on *For the preservation of the cultural heritage in Lybia. A dialogue among Institutions.*

[3] See: Cresti F., *Non desiderare la terra d'altri*, Carocci, Rome, 2011.

[2] Gresleri G., *La "Libia Felix" e i contadini di Balbo*, in Gresleri G., Massaretti P., Zagnoni S., *Architettura italiana d'oltremare 1870-1940*, Marsilio, Venice, 1993.

[3] Gresleri G., *La «Libia Felix» e i contadini di Balbo*, ibidem.

[4] Gresleri G., *La «Libia Felix» e i contadini di Balbo*, ibidem.

[5] Capresi V., *Continuité et rupture. Les centres rureaux d'origine fascste en Libye pendant la période coloniale et aujourd'hui*, in Godoli E., Finzi S., Giacomelli M., Saadaoui A., *Architectures et architects italiens au Maghreb*, Polistampa, Florence, 2011.

[6] Capresi V., *Continuité et rupture. Les centres rureaux d'origine fasciste en Libye pendant la période coloniale et aujourd'hui*, ibidem.

[7] Del Boca A., *Gli italiani in Libia, dal fascismo a Gheddafi*, Oscar Mondadori, Milan, 1994[1], 2010[2].

[8] Mac Laren B., *Architecture and Tourism in Italian Colonial Libya, an ambivalent modernism*, Uiversity of Washington Press, Seattle, London, 2006.

[9] See: Lensi F., Lanfranco Benvenuti, *Architectures touristiques en Tunisie, Libye et Koweït*, in Godoli E., Finzi S., Giacomelli M., Saadaoui A., *op. cit*.

Bibliography

•Scarin E., *L'insediamento umano nella Libia occidentale*, Officine grafiche Mondadori, Verona, 1940.
•Brandi C., *Città del deserto*, Mondadori, Milano 1958; Editori Riuniti, Rome, 2001.
•Messana G., *L'architettura musulmana in Libia*, Edizioni del Grifone, Rome, 1972.
•Camps G., *I berberi. Dalle rive del Mediterraneo ai confini meridionali del Sahara*, Jaca Book, Milan, 1996.
•Khaldoun I., *Histoire de Berberes et des dynasties musulmanes de l'Afrique Septentrionale,* Librairie orientaliste, Paris, 1968-69.
•Beguinot F., *Il berbero Nefusi di Fassato. Grammatica, testi raccolti della viva voce, vocabolarietti*, Istituto per l'Oriente, Rome, 1942.
•Mercier G., *Le Chaouia de l'aures: dialecte de l'Ahmar-Khaddou: Etude grammaticale - Texte en dialecte Chaouia*, E. Leroux, Paris, 1896.
•Roth A., *A la croiseé des etudes libyco-berberes,* Librairie Orientaliste Paul Geuthner, Paris 1993.
•Del Boca A., *Gli italiani in Libia, Tripoli bel suol d'amore 1860-1922*, Oscar Mondadori, Milan, 1994[1], 2010[2].
•Del Boca A., *Gli italiani in Libia, dal fascismo a Gheddafi,* Oscar Mondadori, Milan, 1994[1], 2010[2].
•Cresti F., *Oasi di italianità. La Libia della colonizzazione agraria tra fascismo, guerra e indipendenza (1935-1956)*, SEI, Turin, 1996.
•Cresti F., *Non desiderare la terra d'altri. La colonizzazione italiana in Libia*, Carocci, Roma 2011.
•Mac Laren B., *Architecture and Tourism in Italian Colonial Libya, an ambivalent modernism*, Uiversity of Washington Press, Seattle, London, 2006.
•Gresleri G., Massaretti P., Zagnoni S., *Architettura italiana d'oltremare 1870-1940*, Marsilio, Venice, 1993.
•Davis J., *Le Système libyen, les tribus et la révolution*, Presses universitaires de France, Paris, 1990.
•Cricco M., *Il progetto «Great Man-Made River» e le risorse idriche in Libia*, in «Meridione. Sud e Nord nel Mondo», n. 3-4, 2003.
•Husnein A. A., *From Tripolis to Medina, Historical Development and Urban Morphology of a Libyan Traditional Core*, 1991.
•Dal Bosco O., Grassi M.T., *Mediterranean and roman Libya*, Polaris, Firenze 2007.
•Grassi M.T., *Leptis Magna*, Polaris, Florence, 2005.
•Dal Bosco O., *Leptis Magna*, Ananke, Turin, 2006.
•Dal Bosco O., *Cirene*, Ananke, Turin, 2006.
•Dal Bosco O., *Sabratha*, Ananke, Turin, 2006.
•Marçais G., *Manuel d'art musulman. L'architecture en Tunisie, Algérie, Maroc, Espagne, Sicile*, Picard, Paris, 1926-27.
•Grabar O., *L'arte islamica: la formazione di una civiltà*, Electa, Milan, 1989.
•Hoag J.D., *Architettura Islamica*, Electa, Milan, 1973[1], 2005[2].
•*Encyclopedia of Vernacular Architecture of the World*, Cambridge (UK), 1997.
•Calchi Novati G., L*a questione mediterranea: le condizioni per lo sviluppo dei paesi dell'area mediterranea,* De Donato, Bari,1973.
•Del Boca A., Labanca N., *L'Impero Africano del fascismo nelle fotografie dell'Istituto Luce*, Editori Riuniti, Rome, 2002.
•Godoli E., Finzi S., Giacomelli M., Saadaoui A., *Architectures et architects italiens au Maghreb*, Polistampa, Florence, 2011

Photo 1 Maquette of Oliveti village_ arch. Florestano Di Fausto (1935-38).
Image 2 Brochure of the Libyan Tourism and Hotel Association (ETAL)
Image .3 View of Yefren from a car (watercolour from the brochure: Itinerario Tripoli-Ghadames, 1938).
Photo 4 A Kabaw Castle (photo by E. Scarin).
Image 5 The ground floor of a troglodyte house in Garian (from: E. Scarin, L'insediamento umano nella Libia occidentale, 1940)
Image 6 Sedentary houses (from: E. Scarin, L'insediamento umano nella Libia occidentale, 1940)

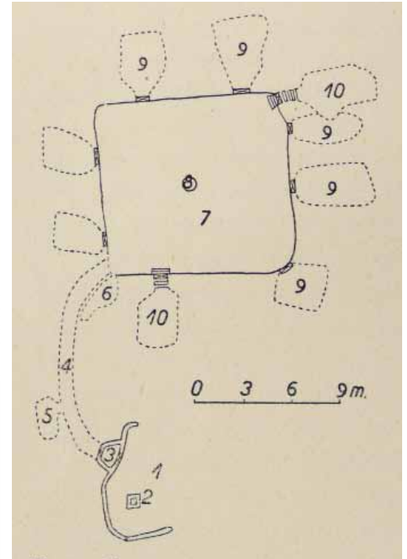


Fig. 42. - PIANTA DI ABITAZIONE TROGLODITICA A GARIÀN.
Da un cortile d'ingresso alla superficie del suolo (1) ove si trova anche il pozzo (2), si entra in un corridoio in muratura (3) che si sprofonda sotterra (4) fino a che, dopo un locale per gli ospiti (5) e un allargamento per animali (6) si giunge nel cortile centrale (7) a 10-12 metri sotto la superficie. Al centro il pozzo di scolo (8), lateralmente grotte che servono per magazzini, per lavorare ecc. (9); per mezzo di due scalette si raggiungono due locali in un secondo piano (10), che servono per dormire.

William Dupont - Sedef Doganer - Saadet Beeson
Adriana Munoz - Laura Carrera
University of Texas at San Antonio, Texas USA

Inventory, Assessment and Evaluation of Historic Resources in Hemis Fair Park for the New Master Plan

1. Introduction

This paper presents a new method to evaluate historic resources in urban contexts, one that scores and grades the resources to facilitate analysis for decisions on reuse of buildings plus integration of new development in designated historic zones. A benefit of grading and scoring is the ability to represent findings with graphs and maps. The visual representations enhance the planning process because they engender rapid comprehension of relationships, possibilities and opportunities. The authors are not aware any historic preservation planning effort yet completed that incorporates a grading or scoring system for analysis of the historic resources.

The case study presented in this paper employs traditional methods of master planning analysis, as well. These techniques concern analysis of context to determine how the place came to be the way it is, and then describe the essential characteristics of form that can be respected in new design to engender continuity of past to future and thus retain the identity of the place. The urban form, cultural landscape and the architecture of buildings are all understood through direct observation plus careful study of historic maps, photographs and architectural history writings.

Both new and traditional methods are applied to a master plan for an area in the center of a large American city redeveloped in 1968 into a World's Fair site called HemisFair Park, approximately 78 acres in size, which was heavily redeveloped with funds from the Federal Government's "Urban Renewal Program."

2. History of HemisFair Park:

HemisFair 1968 played an important role in expanding San Antonio, and was the primary catalyst for growth in tourism that now exceeds 26 million annually. In 1968, 6.4 million visitors came to San Antonio (The Victoria Advocate, 1993). HemisFair was key to the city's expansion because it brought the convention center, hotels, and final transformation of the internationally renowned Riverwalk into modern existence, yet its creation also destroyed much historic fabric of the city. The Hemisfair area was previously occupied by a neighborhood of over 1,000 structures, mostly residential and related outbuildings, but also included a church, synagogue, 2 schools, numerous shops of small scale, larger commercial buildings along the main streets, as well as some light industrial structures.

Pemberton et.al. (2010) mentioned in the Historical and Architectural Conditions Inventory HemisFair Park Area Report that
"The transformation of the HemisFair site was both dras¬tic and swift in the six years leading up to the Fair. The lower-income neighborhood was almost entirely cleared away to make room for a civic center (the Convention Center, still in use and greatly expanded), a fed¬eral pavilion (now a courthouse), a museum (now the Institute of Texan Cultures), and vast clusters of temporary buildings for food service, shopping, and cultural displays (such as those from foreign nations)".
HemisFair became an underutilized place as soon as the fair ended.

Today, there are 22 extant buildings, plus 2 stabilized ruins, which survive from the pre-1968 period within the boundaries of the study area for this project (Figure 1). Of these 24, only 18 survive on their original sites. Additionally, the historic resources identified in the City's HemisFair Historic District include 5 surviving buildings constructed for HemisFair, plus a mosaic, artwork and a plaza also from 1968. The scale of the 1968 HemisFair structures is generally much larger than the surviving pre-1968 structures, and notably different in materials of construction as well as architectural style. Notably, the project site includes a visible remnant of the historically significant acequia, or ditch irrigation system, that typifies and defines the San Antonio's 18th Century development. This portion of the system belonged to the Acequia Madre de Valero, first constructed in the 1720's to serve the farmlands of Mission Valero, now known as The Alamo.

Figure 1: Overall Map of Historic Resources.

Historic Designations in HemisFair

a. Local Historic Designations:

HemisFair was designated as a historic district by the San Antonio City Council under Ordinance No. 64539 and 64540 on 12 February 1987. The listed properties and features include public plazas and artworks no longer extant on the site. Apparently, the historic plazas, save one at the former U.S. Pavilion, were modified or reshaped by various public improvement projects since 1987.
Per city code, exterior changes to properties within a historic district, including the HemisFair Historic District, and/or any demolitions are reviewed by the Office of Historic Preservation and the Historic and Design Review Committee (HDRC).

b. Texas Historical Commission (THC) Historic Designations:

The Texas Historical Commission (THC) has nearly 300,000 site records, including data on
Official Texas Historical Markers and National Register of Historic Places properties in
Texas. There are two types of designations concerning historic resources in HemisFair,
"Recorded Texas Historic Landmarks (RTHL)" and "State Archeological Landmarks."
Per the THC web site (http://www.thc.state.tx.us/), there are two RTHLs in HemisFair, the Mayer/ Halff House, and the Acequia Madre de Valero, designated in 1966 and 1968 respectively. Also there are 25 State Archaeological Landmarks within HemisFair, all designated in 1983. One of these is not assessed in this project because it was not on any of the lists provided by HPARC, though it still stands at 1040 E Commerce Street – the Schroeder-Yturri House, built in 1868.

c. Federal Designations:

The 25 State Archaeological Landmarks in HemisFair are also listed on the National Register of Historic Places. In addition, there are two National Register Districts nearby – Lavaca and King William – plus additional historic resources listed on the National Register across S Alamo Street to the west of HemisFair.

3. Methodology

The assessment of the HemisFair area was based upon databases, information prepared or written by others, and present condition of historic buildings. A rapid visual assessment was conducted for 24 pre-1968 structures, 2 HemisFair 1968 buildings and the Acequia Madre, as well as the overall cultural landscape. Three additional HemisFair 1968 buildings were graded, though not fully surveyed (Table 1).

Table 1: Historic Designations, Survey Scoring and Grading Results

No historic preservation planning effort yet completed has been known to have incorporated a grading or scoring system for historic resources. The assessment of the historic buildings in HemisFair was based upon the Rapid Visual Inspection forms, which were utilized as a method to quantify and compare (ATC-21, 2001; ATC-156, 2001). The system will need further development if it were to be applied to a wider sample group on other master planning efforts in the future.

The opinions on strengths and weaknesses of individual buildings and features, specifically with regard to potential for reuse and redevelopment, are presented along with the evaluation of the historic and architectural integrity of the historic structures and cultural landscape. The raw data of the survey forms must be understood in the context of the methodology explained below.

Architectural Integrity concerns the material, building, or built feature without regard for the context or setting. This refers to object integrity not place integrity. The grade considers intactness of physical form, current condition of materials and systems, clarity of feeling that conveys the historic character, quality of workmanship, and authenticity measured as a percent of surviving material from the period of initial use.

Historical Integrity considers the concept of place and specifically concerns the relationship of the particular resource to it's own historical period of significance. Thus, buildings that have been moved, or are now in a context dramatically altered from the time of initial use, will get a lower grade.

Potential for Reuse considers the past and current use, as well as the success of nearby and comparable buildings, in consideration for future potential. The cost of rehabilitation is not weighed in this grade. Nonetheless, where it is obvious that high costs would be required for a new or ongoing use, this is noted in the comments box and the grade is commensurately lower than an otherwise comparable property.

Figure 2: Architectural Integrity, Historical integrity and Potential Reuse Maps.

The grading of the structures for the given three categories is as follows:
A. Excellent, standard of excellence.
B. Good, exceeds acceptable standard.
C. Fair, acceptable standard.
D. Sufficient, below acceptable standard.
F. Poor, deficient.

As an alternate method for comparison and qualification of historic resource value, numerical scores given for the three categories are also provided. A building can score up to 300 points as a total of 150 points for structural systems and materials, 50 points for non-structural members and construction and 100 points for infrastructure. This point system focuses on the physical condition of materials and building systems and the potential for reuse of the building. Although the points do not measure historical integrity or significance, physical integrity is a factor and thus has a relationship to architectural integrity and potential reuse grades. To summarize, buildings in poor condition receive commensurately lower grades for architectural integrity and reuse potential.

A benefit of grading and scoring is the ability to make graphic representations of the historic resources on a map, coded according to their respective values. The purpose of this mapping method is to enhance the planning process by allowing seeing graphic relationships, possibilities and opportunities at a glance instead of text. Spider graphs, which have been effectively used in other fields (Dau and Fish, 2008), are used for evaluating the buildings in this study. The potential of spider graphs, which is to combine and extend graphs to express constraints on the diagrams and their relationships with each other (Howse et al., 2001), is used in a modified way for the evaluation of buildings in a comparative manner.

Figure 3: Spider graphs showing the difference between a high scoring and a low scoring resource

4. Assessment and Evaluation of Historic Resources in HemisFair Park

Heritage is evident within HemisFair, though the layers of this heritage have been swirled into a jumble that is mostly incomprehensible to any person lacking expertise in the heritage conservation field. Heritage includes tangible and intangible aspects, plus the cultural landscape.

The Acequia Madre de Valero was constructed in the years following 1718 and runs through the HemisFair site. Fed by the San Antonio River, this acequia once served as a primary channel of the Mission Valero's irrigation system and also provided drinking water until the early 1900's. The historic Water Street right of way, still somewhat legible today, is a significant divide in the cultural landscape. Property to the west of Water Street is characteristic of historic development along the acequia irrigation ditches, dictated by the subtle topographic contours of the land.

The issue of temporary vs. permanent construction sometimes comes up in discussions about the historic resources in HemisFair. The veracity of the temporary vs. permanent argument is plausible because all World's Fairs of this type included temporary constructions that were built rapidly and not meant to last. However, it is not valid as the sole rationale for removal of any remaining buildings. The City designated 5 HemisFair structures as historic, and identified artwork on, or in, 2 as historically significant. Without debating the 1987 designations or the 1968 construction intentions (Urban Renewal funds did require construction of some permanent buildings, though the archival records may lack clarity), these 7 surviving structures are all made of durable materials and in service. Additionally, there are numerous examples of poorly built as well as intentionally temporary buildings that are subsequently preserved.

This project distinguishes two types of integrity, architectural and historic, per the HPARC RFP instructions. The historical integrity of all the pre-1968 buildings has been greatly diminished since the time of their construction. Because of the demolitions prior to the Fair, it's fairly simple to understand why the historical integrity is generally quite low.

A total of 6 buildings in HemisFair are not on their original sites. Three structures were relocated as part of the 1968 HemisFair work, the Herman Schultze House, Hermann Carriage House , and the Solis House. In 2002, as part of the Convention Center expansion, an additional three historic structures were relocated: OK Bar, Amaya House and Wietzel House. In some of these cases the move appears to have been done to improve the context in relation to the other historic buildings. While this does help, it also hurts the individual historical integrity of each of the moved structures because they are forever divorced from their original and naturally developed surroundings.

The architectural integrity of many buildings has survived fairly well. Bright spots are those buildings that have remained in continuous use or been recently rehabilitated. Those that have been physically neglected score lower, because they have suffered losses.

All the buildings at HemisFair have some potential for reuse, except for the Tynan dependency ruin. In consideration of reuse potential, there are a variety of factors that can be reasonably measured, such as ceiling height, square footage, availability and condition of utility infrastructure, proximity to parking, visibility from street, lack of code compliance and overall need for repairs to building and site. These factors can be addressed, and limitations overcome, with sufficient investment of capital.

The ideal use for most historic buildings will be a continuation of the existing use, or something closely related to a former use from the historic period. HemisFair has lost the single-family residential characteristics and credentials of its pre-1968 times. All the pre-1968 structures are now best used as small office buildings or possibly retail shops if foot traffic is high enough to support.

The historic preservation strategies of the Master Plan need to enhance what is good and repair what is damaged. Below are six opportunities that come to us from the cultural heritage of San Antonio.

1.Preserve the older buildings.

All the older buildings deserve to be preserved. Ideally, the buildings should not be moved, even to consolidate them into a tighter formation, as this may further falsify the sense of historical development already damaged by previous demolitions and moves. If moving is deemed necessary to infill a particular spot, consider one of the six buildings previously moved. The Solis House that was moved into the middle of the former Water Street right-of-way is an exception to this recommendation against moving the buildings. The Solis should be moved.

2.Reestablish former streets.

Reestablishment of the former street grid will enhance the character and quality of the place. The City will become legible again, knitted back together so people can move through naturally on foot, bicycle, car, and public transportation. With the former streets, the older buildings will become anchored to their former context, no longer adrift on the foreign sea of the HemisFair landscape, and their historical integrity will increase. Proper quality of landscape design (plantings, trees, edges, surfaces, street furniture, etc.) will be essential to success. Inspiration and design tips can be found in the historic photos of the old neighborhood. Thoughtful attention to potential dead end streets created by the Convention Center and elevated highway will be necessary.

William Dupont - Sedef Doganer - Saadet Beeson
Adriana Munoz - Laura Carrera
University of Texas at San Antonio, Texas USA

3.Utilize alleys.
San Antonio has alleys running through many blocks. These can be seen on the old maps from the late 19th century. They are a characteristic of the place that helps retain a good pedestrian scale, and are useful for service functions.

4.Build infill structures in the western portion of HemisFair.
The density of buildings in the key area around the acequia remnant is too low. A greater number of buildings are needed to enhance the older ones and make a viable place for people to live. The legacy of the place calls for this. Before 1968, this particular area had a mix of building types visible on the Sanborn Atlases and historic photos that display a range of uses and residential income levels. With appropriate scale and massing of infill, the area can be successfully revitalized.

5.Respect the cultural landscape of San Antonio
Some useful building traditions are evident in former and surrounding neighborhoods, and readily understood from historic photos plus extant examples. These building traditions can be deployed to effectively engender continuity with the rest of the City. New development can respect cultural and regional characteristics of form.
-Clear definition of street edges with fences or zero lot line buildings
-Canopies or overhangs that span the public sidewalks at places of commerce or retail.
-Retail at corner intersections and with entry designed for pedestrians
-Larger retail tightly oriented close to edge of (not set back from) major streets
-Along the river, buildings with two entrances – river and street.
-Bridges, numerous and attractive, vehicular and pedestrian, spanning the river.
-Large trees.
-Use of alleys.
-Respect for intense western solar exposure in late afternoons, with places of human interaction (such as ice house seating areas) in the shade.
-Utilization of the prevailing and frequently strong breeze from the southeast.

6.Follow the legacy of the Spanish acequia system.
The legacy of the acequias can be respected and perpetuated in several ways. The acequia is an ancient system for the management of water as a precious resource. Because acequias were visible and defining features in the cultural landscape, new methods of water management can also be visible and character defining in ways that respect the legacy of the past. However, this does not mean that the master plan should call for restoration of additional acequia remnants. The one that survives is appropriate. Because the acequia system is no longer operational, more remnants would be pointless and would not contribute to the continuity of San Antonio cultural heritage.

The remnant of the Acequia Madre needs proper respect and care. This surviving feature should not be enhanced in a way that would romanticize or falsify its history as an irrigation ditch.

A second method to respect the acequias would be to reinstate the street grid and some sense of the complex property configurations, especially prevalent to the west of the former Water Street, as described previously.

This neglected area of the city can be a vibrant and vital neighborhood with a blend of new and old construction that respects the cultural heritage of San Antonio and engages with the surrounding context.

5. Conclusion:
The new method of evaluation has wide application to master planning efforts that concern reinvestment and new development within urban zones designated historic. There are stipulations that must be recognized to avoid inappropriate application. First, expert opinions of qualified professionals are needed to get meaningful results. The grading and scoring requires advanced knowledge of building pathology, architectural history and theory of historic preservation. Second, practitioners must acknowledge that grades and scores are only relevant within the bounds of the study area, meaning the scores are not transferrable to compare against resources outside the study area. Finally, the method cannot be used in isolation. Other methods must be employed concurrently, lest the value of the “forest” be overlooked in analysis of individual trees.

Historic preservation generally advocates a curatorial approach to management of historic resources, aligned with management principals practiced by museum curators, and has resulted in fine preservation of numerous historic zones around the world. The approach has shortcomings, though, when making plans for managed growth and change of urban zones that include historic landscapes and resources, because history cannot be successfully curated as a static collection in the face of large-scale reinvestment and redevelopment. More sophisticated guidance is needed, and metrics are useful for this purpose. The authors expect to refine the new methodology of analysis in future planning efforts and hope other practitioners develop comparable methods to advance the field as a whole.

References:

ATC-21, 2001, Applied Technology Council, California, USA
ATC-156, 2001, Applied Technology Council, California, USA
Dau, F., Fish, A. “Conceptual Spider Diagrams”, P. Eklund and O. Haemmerl ŕe (Eds.): ICCS 2008, LNAI 5113, pp. 104–118, 2008. Springer-Verlag Berlin Heidelberg 2008
Howse, J., Molina, F., Taylor, J., Kent, S., Gil J.Y., “Spider Diagrams: A Diagrammatic Reasoning System”, Journal of Visual Languages and Computing, Vol 12, Isuue 3, June 2001, pp: 299-324.
Pemberton, Sue Ann, et.al. *Historical and Architectural Conditions Inventory: HemisFair Park Area*, San Antonio: The University of Texas at San Antonio, 2010.
The Victoria Advocate, *HemisFair Ignited Tourism Industry in San Antonio*, April 11, 1993.

Legend:

Figure 1: Overall Map of Historic Resources.
Table 1: Historic Designations, Survey Scoring and Grading Results
Figure 2: Architectural Integrity, Historical integrity and Potential Reuse Maps.
Figure 3: Spider graphs showing the difference between a high scoring and a low scoring resource

Jennifer Gaugler
MASS Design Group, California USA

The Fluidity of Scale and Time in Jože Plečnik's Ljubljana

The identity and development of Ljubljana, the capital of Slovenia, were greatly influenced by native architect Jože Plečnik. Located on a site first settled in the ancient Roman era, Ljubljana is comprised of centuries of history embedded within a thriving modern city. The east bank contains the old city and castle, while the west bank holds the modern commercial core. The Ljubljanica River flows through the center of town, past Baroque buildings and under the ramparts of the ancient castle on the hill. In this rich setting, Plečnik's ubiquitous work plays off both the historic and the modern, fusing classicism with the contemporary in a wholly original way. Over the course of twenty years, Plečnik had more influence in the realm of urban planning for one city than most architects will ever have in a lifetime. Ljubljana is an ideal city to study the bridging of an ancient era with modern times, and it is unique because there are few other places which so clearly bear the mark of one individual.
In its central European location, Slovenia has maintained a powerful sense of national identity with well-preserved cultural traditions and distinctive architecture. Geographically, Slovenia is a nation at the crossroads of Europe, and thus Slovenian culture reflects a synthesis of the influences of North (Germanic) and South (Roman) culture. Typically, the Northern influence was more modern, while the South represented tradition.[1] This innate conflict is highly visible in the work of Jože Plečnik, and his work reflects the search for an architecture of national and municipal identity.

Jože Plečnik was born in 1872 in Ljubljana, Slovenia (at the time Austria-Hungary). He studied under Otto Wagner and worked in Vienna for the first part of his career, and then moved to Prague to teach and act as the architect for the renovation of Prague Castle. He finally returned to Ljubljana, where he transformed the city from the 1920s through World War II. An earthquake destroyed a great portion of the capital in 1895, and the need to rebuild much of the city in the subsequent decades created an opportunity for Plečnik to make his mark on his place of birth. Ljubljana provides the most extensive case study of Plečnik's work, and it is an ideal place to study the contribution of a designed cultural landscape to local and national identity. Plečnik used a fluidity of both scale and time to create his narrative for the city.

Plečnik's work defies simple classification. He combined classical elements of architecture with aspects of contemporary design and popular culture to form "a universal grammar comprehensible to the public at large"[2]. His work is highly referential; it has a strong religious ethos, uses regional language, and contains "specifically local, symbolic elements that return[ed] a social and psychological dimension to architecture"[3]. Although Plečnik's work contains too many historical and regional references to classify him as a Modernist, he did share some ideology with the Modernist movement. Plečnik and the Modernists were united by a belief in the moral basis of architecture with a mission, and a conviction that high quality architecture could lead to a better world.

However, Plečnik's work also can be surprisingly witty or humorous. This can be seen in some of his human-like figures, such as the lamppost at the Church of St. Francis of Assisi (Fig. 1). These playful designs reveal Plečnik's intention to humanize architecture, and to make it somewhat subversive. Plečnik was a deeply religious man who respected authority, but he also felt that his work was fundamentally for the people, not the state or institutions. The Theater Alley lamppost, with its droopy demeanor, must have been intended to bring a little humor to the daily travels of the citizens of Ljubljana (Fig. 2).

Plečnik's contributions to Ljubljana run the gamut from large buildings to small details; from the National and University Library, the Mutual Assurance Building, and the Stadium to lampposts, stairs, pavement, and benches. All of Plečnik's architectural works in Ljubljana are an "expression of this determined wholeness."[4] An attention to detail was a part of Plečnik's architectural creed, as he felt that the tradition of craft could be maintained within architecture only by "a rejection of modernity's 'principle of economy,' which destroys the very essence of art"[5]. For Plečnik, true art required craft, which required labor – the mind and hand of man. He believed that man could become closer to God by the pursuit of harmony and clarity in a work of art. Plečnik's attention to detail was also motivated by his desire for Ljubljana to be a city for pedestrians, not for cars. This led him to design down to the smallest scale, since only pedestrians can stop and look closer at a beautiful detail like a well-crafted doorknob[6].

At the same time, with his eye on the larger scale, Plečnik designed vistas that would draw the pedestrian from one place to the next. He created optical connections between similar elements such as the pyramid on Zois Street and the spire of the church beyond, and he carefully designed paving patterns that made the journey part of the experience. There are also some connections that can only be explored on foot, allowing pedestrians to create their own experience. For Plečnik, it was important to experience the city as a story. Plečnik's vision for the layout of Ljubljana encompassed specific routes which he came up with as he walked around the city[7]. He in effect 'edited' Ljubljana – emphasizing some features and deemphasizing others. Plečnik planned two major axes across the city: one connects some of the major gathering spaces in the city, and the other is the Ljubljanica River, running more or less parallel to the first axis. Several bridges designed by Plečnik cross the river (Fig. 3). These axes were embellished to tell a more informative story; for example, busts of prominent Slovenian figures of history are placed along the street between the Library and Congress Square. With a profound respect for history, tradition, and memory, Plečnik rejected the Modernist creed that architecture must make a break with the past and contain no recognizable historic elements. Plečnik saw himself as "an autonomous perpetuator of history"[8]. However, he had a particular approach to perpetuating history which may seem odd or wrong to today's historic preservationists. In his renovation projects, Plečnik did not adhere to any standards of historical accuracy, which he most likely would have considered too limiting; he chose to focus more on making a place special than preserving it untouched for didactic purposes.

Plečnik blurred the boundaries of real and fictitious history with his renovation of the Roman Wall in Ljubljana. Once part of the defense system of the ancient Roman city of Emona, the wall had been preserved along the length of Mirje Street, but it had fallen into disrepair. Plečnik renovated the wall and created several new features, including a stepped pyramid over a portal and a new arched opening (Fig. 4). His interventions to the ancient structure incorporate anachronistic materials such as concrete block, and they reflect different eras and regions of the world. These interventions may seem inaccurate and confusing, but they create strong visual landmarks along the street and transform an unremarkable stone wall into a more interactive experience. In this way, Plečnik has added contemporary value to this artifact and ensured its continued presence in the cityscape.

A former monastery complex called Križanke is another example of this tension between historical accuracy and deliberate place-making. Plečnik revitalized this tired group of buildings and courtyards by attaching arcades that could act as theater boxes, adding lampposts, and creating new paving patterns (Fig. 5). Some of these interventions are clearly modern but others are harder to identify. Surfaces with decorative engraved patterns and lettering are stylized to look old. Without prior knowledge of Plečnik's influence, it would be easy to see the complex as a place that has evolved organically to what it is today.

This method of creating implied history could have political implications. For example, there is a gate near the entrance to the Križanke courtyard with an antique statue on either side of a portal framed by columns (Fig. 6). The overall style of the gate is very classical, and the decoration seems authentically old. However, on each column, there is a subtle hammer and sickle – a symbol of socialism – incorporated into the engraved pattern. This could subconsciously imply that socialism is a belief system venerated by time and validated by a long existence.

Plečnik's interventions give Križanke a sense of timelessness, of belonging to no particular era. The same could be said for the Roman Wall and other works by Plečnik which mix the old and new. Ljubljana is thus grounded in a false pastiche which may be historically inaccurate, but it gives a patina to the city and makes a richer experience for the visitor and resident alike. Rather than a modern city which has carefully catalogued and exhibited its history, Ljubljana is surrounded by and still living its history. Modern Western standards of historic preservation suggest that any interference with a historic place should be limited, and the old and new should be clearly identifiable. Plečnik's work suggests that there are alternative ways that the modern and the historic can be integrated. Blurring the boundaries between eras may allow for a richer cultural landscape.

In his built work, Plečnik often used synecdoche, or the use of a physical component to represent an architectural principle. For example, he employed disembodied column capitals without a column in the Ljubljanica sluice gates and the side of the Vodnik tomb at Žale Cemetery. Physical disassociation is a common motif in Plečnik's work, and it is clearly seen in the front façade at the church of St. Francis of Assisi, where the pediment is "floating" above the columns at the main doorway, and the column capitals have no shafts at the secondary doorway (Fig. 7). This physical disassociation mirrors the facile way that Plečnik disassociates elements from their time period. Through these manipulations, Plečnik forces us to notice elements which have become so repeated throughout architecture and so standard that we may no longer see them. He adds a layer of criticality to these historical motifs, effectively reintroducing them back into modern architectural discourse.

Plečnik's willingness to play with classical references reveals some of his personality and motivation as an architect. Neoclassical architecture has often been used at the birth of a new nation, to recall the progressive democracy of the Greeks. In Ljubljana, where Plečnik was practicing at a pivotal time in the move of Slovenia toward independent nationhood, he made many architectural references to classical style. However, the references are not literal – they often involve some kind of divergence from or play on the classical. Dr. Peter Krečič emphasizes that Plečnik subverted the classical style because of his love for the people[9]. His architecture was humorous, witty, and erotic, because it was architecture for the people, not the state. Plečnik's architecture is many things – historicist; modern; religious; mystical – but above all it is democratic.

Plečnik designed many freestanding columns which could be interpreted to represent democracy and the freedom of the individual. In classical architecture, the column was used to structurally support the pediment, but it was also a metaphor for the human being. Thus, the classical temple façade could be seen as a visual conveyance of the republican principles of a state being supported by the people who are all of equal stature. However, it could also be interpreted as the government loading a weight or burden onto the people. Plečnik wanted to design to uplift the people, and to free them of this weight. Thus he often placed single, freestanding columns, which support nothing but the sky (Fig. 8). They can be interpreted as a celebration of the autonomy of the individual. Plečnik also freely used columns of different styles or different proportions on the same building, perhaps to express an appreciation for the range of individuality within the human race.

Plečnik's interest in classical design was sparked by a period of time when he studied abroad in Italy, as well as a trip to Greece. He would also have grown up, like all Ljubljana citizens, with the cognizance of the existence of the ancient Roman city of Emona beneath his feet. His travels obviously inspired a deep appreciation for classical design (both architectural and city planning). Plečnik conceived of Ljubljana as a new Athens, and in fact many of Plečnik's works in Ljubljana can be seen as a parallel to an element of Athens: the centrally located Congress Square as the agora, the colonnaded Central Market as the stoa, the castle on the hill as the acropolis, and the Žale Cemetery as the necropolis. Plečnik may have been using historic precedents, but "despite his direct reliance on historical models, his conception of Ljubljana as the image of a new Athens is a characteristically modern idea, since it derives from a conscious and personal attempt to effect a complete transformation of the town"[10]. The Central Market is a quintessential example of Plečnik's Mediterranean-influenced architecture in Ljubljana (Fig. 9). It lines the Ljubljanica River between the Triple Bridge and the Dragon Bridge. The open colonnade, recalling a Greek stoa, provides relief from sun or rain and space for people to socialize and eat something. The Central Market plays off of local history as well as classical; in addition to the Greek stoa, the market's longitudinal form and circular staircase recall the city walls and guard towers that used to encircle the old town[11]. Again, Plečnik drew upon different eras of the city's history to enrich its present functionality and beauty.

Even though Plečnik's work frequently drew upon classical architecture, he did not shy away from incorporating mystical or mythological elements. Plečnik had spent time working in both the Czech Republic (then Czechoslovakia) and Austria, and his time there led him to develop an appreciation for mysticism which ended up forming the dialectic pole to the classicism that he also revered. Just as classical elements from the South (Italy) found their way into his work, he also absorbed mysticism from the North (Germany and Austria)[12]. This duality was one of the defining characteristics of his work.

Myth is an important part of the Slovenian identity. According to legend, on the way back from capturing the Golden Fleece, Jason and the Argonauts traveled up the Ljubljanica River and encountered a dragon which Jason killed in battle. The contemporary symbol of Ljubljana is a dragon because this legend has become part of the city's consciousness. The Dragon Bridge (not designed by Plečnik) is one of the most visible symbols of this legend, but Plečnik further increased the sense of Ljubljana as a city of legend or mythology with his architecture. The sluice gates that Plečnik designed for the Ljubljanica River are a perfect example. Plečnik wanted these gates to be a triumphal arch over the river as it left the city . The gates have urns encircled by sea serpent heads on one side, and Greek-looking figureheads on the column capitals on the other side (Fig. 10). The implied mythology of these gates emphasizes the importance of the river to the city, and adds to the sense of Ljubljana as a city with many significant historical eras.

Plečnik strove to create an architectural identity for Ljubljana without relying on traditional Slovenian or Slavic symbols. He instead used classical motifs with his own unique application of texture, proportions, and materials to create a new identity for the city. A city unlike any other, Ljubljana is a model of culturally sustainable development, and it occupies a unique place in the canon of modernist-era architecture and planning. It is an example of profound integration of design on many scales (street furniture, building, road, city), as well as the linking and weaving of the elements of place across many different eras. Plečnik's Ljubljana demonstrates a compelling fluidity of boundaries with respect to architecture versus urban planning, historic versus modern, or building versus city.

Jennifer Gaugler
MASS Design Group, California USA

Notes

[1] P. Krečič, *Ljubljana – A Mediterranean City? Plečnik's Experiment*, in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010.

[2] F. Burkhardt, *Modern or Postmodern: A Question of Ethics?*, in *Jože Plečnik, Architect: 1872-1957* (The MIT Press, Cambridge, 1989), 112.

[3] Burkhardt, 109.

[4] A. Arvois and C.C. von Eybesfeld, *Plečnik, Vienna, and the Arcana of the Baroque Tradition*, in *Jože Plečnik, Architect: 1872-1957* (The MIT Press, Cambridge, 1989), 19.

[5] Arvois, 19.

[6] P. Krečič, *Plečnik's Ljubljana*, in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010..

[7] P. Krečič, *Plečnik's Ljubljana*.

[8] P. Krečič, *Jože Plečnik and His Žale Complex,* in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010.

[9] P. Krečič. *Interview with Jennifer Gaugler. Personal interview*, Ljubljana, June 16, 2010.

[10] P. Krečič, *Ljubljana – A Mediterranean City? Plečnik's Experiment.*

[11] T. Renar and U. Rustja, B*etween Spatial Concept and Architectural Expression of Plečnik's Market in Ljubljana*, in <<Architectural Theory Workshop Ljubljana>> (2007), 16.

[12] P. Krečič, *Ljubljana – A Mediterranean City? Plečnik's Experiment.*

[13] P. Krečič, *Ljubljana – A Mediterranean City? Plečnik's Experiment.*

Legenda

Figure 1. Lamppost at Church of St. Francis of Assissi
Figure 2. Theater Alley Lamp post
Figure3. Ljublanica River and Plečnik's Triple Bridge
Figure 4. Pyramid at Roman Wall
Figure 5. Balcony at Križanke
Figure 6. Portal at Križanke
Figure 7. Secondary doorway at Church of St. Francis of Assissi
Figure 8. Freestanding columns by Plečn
Figure 9. Central Market, river side
Figure 10. Figureheads on sluice gates

Note: all images are my personal photos

Bibiliography

Arvois A. and von Eybesfeld C.C., Plečnik, Vienna, and the Arcana of the Baroque Tradition, in *Jože Plečnik, Architect: 1872-1957*, The MIT Press, Cambridge, 1989.

Burkhardt F., *Modern or Postmodern: A Question of Ethics?,* in Jože Plečnik, Architect: 1872-1957, The MIT Press, Cambridge, 1989.

Krečič P., *Interview with Jennifer Gaugler. Personal interview*, Ljubljana, June 16, 2010.

Krečič P., *Jože Plečnik and His Žale Complex*, in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010.

Krečič P., Ljubljana – A Mediterranean City? Plečnik's Experiment, in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010.

Krečič P., *Plečnik's Ljubljana*, in 'Contributed Articles,' www.plecnik.net, accessed October 25, 2010.

Renar T. and Rustja U., *Between Spatial Concept and Architectural Expression of Plečnik's Market in Ljubljana,* in <<Architectural Theory Workshop Ljubljana>>, 2007.


Figure 1

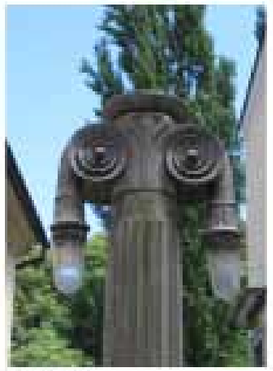


Figure 2


Figure 3


Figure 4


Figure 5


Figure 8


Figure 6


Figure 7


Figure 9


Figure 10

Valeria Pracchi - Hebatallah Elsayed
Politecnico di Milano, Italia

Continuity of urban culture Challenges and opportunities facing urban conservation

Conservation and sustainability in Historic cities examines how the two key issues of urban conservation and sustainability relate to each other in the context of historic cities, and how they can be brought together in a common philosophy and practice that is mutually supportive. It sets out the theoretical and practical background to architectural conservation and how its perceived relevance and level of attainment can be extended when harnessed to wider agendas of sustainability and cultural identity. [1]
(D. Rodwell, 2007)

Abstract:

The relationship between urban development and the conservation of the historic city has not been a simple matter. There is no simple causal relation between the two processes. Many factors have made this relationship complex[2] such as: the style of development and poverty; the intensity of demographic changes; the size of the city and its importance for the region or country; the balance of the economic sectors in the local economies; the type of political participation by social groups; the social perceptions in relation to the importance of environment and culture among other factors. It is undeniable that the urban development of the city has put pressure on the urban structure and the building stock in order to adapt them to its requirements.

Also, it is clear that the urban heritage structures have suffered more kinds of impact than the more modern parts of the city. This has led to the formulation of public policies to protect the urban heritage structures and to regulate requirements from private initiatives. The idea of the value of the urban heritage has changed a lot in this period and has not yet achieved a consolidated social concept[3].

This has been an outcome of the improvement of urban management in order to face the challenges of the local development process. Saving and developing historic City is a particularly complex problem owing to different interest groups involved. Each interest group has its own demands, perspectives, and priorities when dealing with historic areas. Therefore, any proposed upgrading needs to be negotiated among different groups.

This complicated operation depends on different values and factors affecting the area; historical, sociological and economic. This paper will argue that the apparent antagonism between development and conservation is a consequence of the design and implementation processes of public policies in relation to private initiatives. It is essentially a problem related to urban management particularly to the ability of local governments to generate alternatives that include both heritage values and development perspectives formulated by the main and powerful economic actors.

A changing world, Architecture under threat

For reaching transformations and pressures to which architecture, landscape and traditional territory are main subjects. Today, traditional surroundings are in a dramatic situation throughout the Mediterranean Basin, they are facing a continuing loss of their social and cultural character, threatened by intense degradation and constantly on the retreat. Likewise, the breakdown of the traditional districts and the tendency to cultural homogenization as a result of globalization have brought about disregard for much of its architecture, often considered to be a symbol of neglect with values and qualities that are far removed from the concept of modernity.

Pressure on the traditional habitat began with the process of industrialization, though it was much accentuated by the modern movement and urbanism in the early 20th century, seeking new models of districts and building cities that could overcome the deficiencies of traditional settlements; it went as far as denying all functional, social and even aesthetic values, and radically placed 'the new' before 'the old'. This process emerged at different times according to the country in question and whether we refer to the urban or the rural space. Today, in the era of the 'global village', when the metropolitan industrial city is turning into a diffuse metabolism and the borders between country and city are becoming increasingly hazy, the pressure on this architecture and the population that it houses is even greater. In the rural environment, many districts are becoming depopulated due to the lack of alternatives for development, and others are subject to violent transformation under the pressures of property or tourism-related speculation without the necessary urban planning.

This contemporary urbanism is upsetting the historical balance between humankind and nature, and converting the rural landscape into a landscape without activity, where traditional architecture loses its meaning and original function, and is reused and transformed. In urban environments, the 'historical nucleuses' are affected by different problems according to each historical and regional circumstance, which we could summarize according to four main vectors of pressure, sometimes complementary or simultaneous, and with differing degrees of influence: nucleuses in the process of overpopulation due to migration (south-north or country-city) with the subsequent physical (over occupation and modification of the district), social (constitution of ghettos, insecurity, etc.) and environmental (insalubrities, lack of comfort, pollution) deterioration of the urban environment; nucleuses in the process of depopulation due to the abandonment of the historic fabric for the city, with the subsequent loss of social values and the deterioration of buildings and architectural heritage; nucleuses affected by heavy-handed urban renovation work (demolition of heritage, destruction of the historic fabric with the creation of new expressways, incoherent insertion of new architectures), and, finally, nucleuses affected by processes of urban reinvestment, in which we can distinguish three main processes: the development of tourism, tertiary (especially in historic centers) with the possible loss of the residential function, and gentrification (the installation in a run-down neighborhood of residents from a high-income bracket), all processes that can have a counterproductive effect in social terms. People want to hang onto a sense of place, and they're losing that. They're losing their stories and their connection to place.

A sense of place is about handing on to the next generation your story, the one that you've inherited. It's about belonging. We have many social problems that are a result of not having a sense of community. The old city center is seen as the place of superposition of culturally different forms of spatial organization which have left strata reflected with a great internal consistency by today's urban morphology. To guarantee its continuity maintenance has been one of the objectives of the planning schemes accumulated in the course of its history. What is now needed is overall reflection to guide its future.

Ensuring the long-term durability of the scheme

The countries of the Mediterranean have a historical charge of several centuries, or even millennia. Over time, buildings are developed around the original centre, while the oldest and least well adapted ones are gradually modernized or replaced: so, the traditional agglomeration is established within certain continuity, with the added pieces assimilated over time and no brutal rupture. The rehabilitation and urban renovation of a property (block or a whole district), is a part of this slow process of urban renewal, ensuring its durability. At various periods, though, certain district rehabilitation operations have always caused social and physical rupture, breaking the principle of urban continuity. To anchor the scheme in the present and the future, it is therefore necessary to open up the reflection to civil society, with an approach looking both backwards and forwards.

Beyond the theoretical knowledge of the history of the district, it is a good idea to perpetuate the memory of the place through the testimony of the older residents and local associations, in order to nourish the intangible dimension of the scheme and to provide particular clarification on certain physical traces of the past which must be preserved and improved. Putting the scheme in a long term perspective, which cannot be dissociated from its historical context, requires prior consultation with representatives of associations, the political world and sometimes the religious world, as well as a wide spectrum of local society. Local elected representatives and public authorities must express their view in accordance with the role they see the site concerned playing within the territory as a whole. However, in the interests of the durability of the scheme, it is worth separating the results of short-term political strategy (at the level of a term of office) from what really lies within a long-term objective of general interest. An initial political agreement on the strategy for the scheme makes it possible to limit the risk that the operation could become blocked. Associations are often an extremely rich context because of their diversity and human resources supporting a busy social life, particularly in traditional districts.

Associations can be directly involved in the scheme as current or future users or simply as local residents. In this case, their point of view on the scheme acquires a degree of legitimacy provided the particular interests of their members do not take precedence over the general interest that the project is intended to serve. Some specific associations could be a valuable aid in drawing up a strategy by offering specific clarification on various matters or by expressing needs concerning social life, education, culture, leisure, the environment, health or security.

Beyond the facts and viewpoints highlighted by representatives of the scientific and educational worlds, it is appropriate to find out about the tendencies expressed by the various professional worlds. Business leaders, such as representatives of professional chambers, heads of firms, traders or craftspeople can provide their strategic knowledge about the development of activities, markets and jobs, as well as the potential and disadvantages for the scheme of the site concerned. However, with the acceleration of the development of means of production and economic models accompanying globalization, it is a good idea to be prudent concerning the durability of the concepts to be adopted in the rehabilitation strategy.

Historic Centers and Renovation

The profound changes in societies have made town planning and urban development more and more complex: The increasing number of people involved with conflicting interests, the influx of new information and telecommunication technology, the importance attached to networks of all kind (communication, cultural, business, information, etc ...), the need for ecological measures to protect the environment, migration of inhabitants, globalization, interdependence, the liberalization of the economy and the integration of markets, the decrease in the role of the public sector, new methods of production, new social customs in business and in leisure activities, the greater importance of culture and nature, the modernization of transport infrastructure, new concepts of mobility and logistic changes in the way people and goods move.

A good example of historic center renovation and urban transformation is Barcelona. It is a model that understands the city as a space of co-habitation between persons, beliefs, cultures and languages of which Cituat Vella is the best example. It consists of four areas, three of them in the historic centre (Raval, the Gothic Quarter and the districts of Sant Pere, Santa Caterina and Ribera) and the district of Barceloneta, located on the sea front. Ciutat Vella plays various roles these days; the symbolic aspect of the district's historic legacy and its vocation as a center has obviously enabled it to retain many directional, tertiary and cultural functions. These have given rise to a fabric of other functions which accord the district a strong role in the metropolitan system. Also, it has to be taken in consideration the effect on no directional functions such as residences and small services. These roles differ and vary according to the difference in use from weekends to weekdays, midday and night time, summer and winter, etc …. The way in which spaces are used depends on residence or as a result of the induction of various uses which attract workers, users and visitors which can provide a clue to the definition of strategies that was used for intervention or for the characterization of sequences of urban spaces. This covered three main themes: tourism (large tourist amenities and hotels), tertiary activity and symbolic and institutional centrality. The process of transformation of Barcelona's old district (Ciutat Vella) has developed a condensed area during the past two decades. It is a result of various historical processes of nature, social, political and urban which originated in the formation of the Roman city that determine the various generations inherited and adapted in a vital process in flux.

"Social cohesion and economic competitiveness are not mutually exclusive but in fact complementary objectives. In order to reach a balance between the two, governance is the key element. A strategic view needs to be developed that will take into account every municipality and will help the diverse objectives of the different actors to coexist in harmony."[4]

The City Council asked the Catalan Government and Spanish Government to take part in the project and the decisions were agreed jointly with the resident association of the four districts and with financial institutions such as Barcelona Chamber of Commerce. During the first half of the 1980s, the Special Plans for the Internal Reform of the Raval, the Eastern Sector of the Old Town and Barceloneta districts were drafted and in 1986 it was decided to designate Ciutat Vella an Area de rehabilitacio integrada (ARI), a measure which allowed all the administrations capable of taking action in the district to combine their projects and efforts. That same year, Barcelona was chosen as the host of the 1992 Olympic Games, an event that made it even more necessary to take action on a large scale in the city centre.The urban, economic and social regeneration of Ciutat Vella is an unprecedented process in the modern history of Barcelona, one which responds to the duty of attending to the basic rights of people, remedying structural shortcomings in the district. The results reveal a strong commitment to a model of city centre fully integrated and offering quality of life, guaranteeing the maintaining of residential activity.

Historic districts linked with urban development

"Historic districts must not become isolated from the rest of the urban area. Local projects must be supported and integrated into an overall urban development plan to make sure the historic district does not become an element of spatial or social segregation in the region."[5]
Past urban revitalization projects for historic districts increasingly show how action is restricted when it centers solely on buildings without taking into account the inhabitants, networks, locations and interaction of the city with its wider area. Cituat Vella renovation and urban development that took place between the historic centre and the rest of the city has facilitated the access to the centre, which depends on such access for its very survival and development.
"To be most effective, the conservation of historic towns and other historic urban areas should be an integral part of coherent policies of economic and social development and of urban and regional planning at every level." Consequently, "the conservation plan should aim at ensuring a harmonious relationship between the historic urban areas and the town as a whole"[6].

Revitalization processes of historic districts can improve inhabitants' living conditions and enhance the value of the heritage if certain pitfalls are considered; preserving the local population (residents and traditional merchants) and traditional occupations strengthen the urban social links, marketing existing trade, avoid the isolation of the historic district from the rest of the city, involving the inhabitants in the preservation and conservation process and finally never consider and develop tourism as the sole activity.

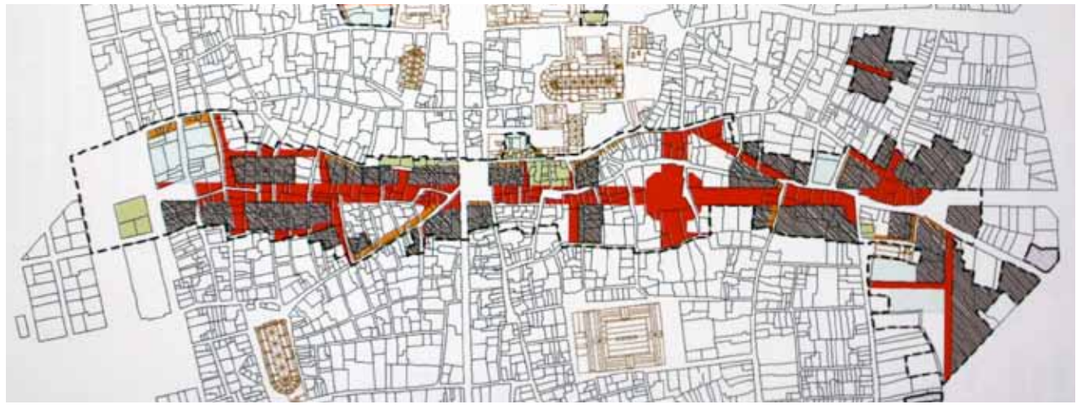
Conclusion

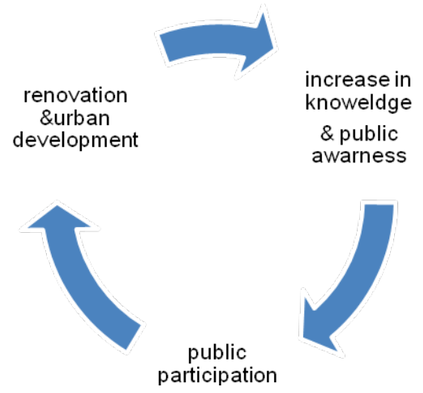
Sustainable development is a new approach in urban planning which encounters heritage as illustrated in this statement: “make past part of our future”. This is the idea which has resulted from centuries of abortive attempts in heritage planning. Future belongs to the nation who knows their history as its top priority process in recent years. This contains two great concepts of conservation and social awareness. Conservation in the form of active conservation is the ideal achievement for sustainable planning and awareness is a factor which is associated with it. There is not a particular model for planning in historical cities. But by considering the key challenges in historic cities, main areas can be mentioned. Two important bases for achieving active conservation are “city management and public participation”. To obtain some planning and design strategies for sustainable development in historic cities, rehabilitation of cultural and social values in the old city form is essential. It must be emphasize that success in such planning is related to both management and participation, there will be no progress in historic cities until the gap between conservation disciplines and planning is reduced so that they could be visible simultaneously. The guarantee for such achievement, beside its usual aspects requires independent city management institutions that are able to allocate the incomes of heritage for local public services by their legal authorities. Today, many real and virtual initiatives present themselves; perhaps it is necessary to define the basic conditions required to guarantee a satisfactory level of coexistence with historic heritage. It is also necessary to realize, however, that this process involves very diverse sectors whose compatibility has to be evaluated in the face of different uses and actions. On these bases, the instruments of planning and heritage regulation can be adapted in the form of intervention and projects The revitalization process of historic districts must be in line with the multi-faceted nature of urban development and its reality; that is, it must respond to the needs of all inhabitants and users.

Bibliography

•Abada, G., *Heterogeneity within Homogeneity: Fragmentation and the Possible Re-Coherence of Traditional Urban Forms* in Cairo 2004.
•Abada, G.,*Modernization and Transformations of traditional Urbanism*. Master Thesis, the University of Leuven 1994.
•AKTC, *The Historic Cities support programme*, (Draft version,October 21) Geneva, AKTC press 1992.
•Aldo Rossi, *The Architecture of the City*, MIT Press, (Cambridge, MA), USA, 1984
•Al Sayyad, *N. Cities and Caliphs. On the Genesis of Arab Muslim Urbanism*, Greenwood Press, Washington 1991.
•Ananya R., AlSayyad N.,*Urban informality: transnational perspectives from the Middle East*, 2004
•Barcelona City Council, *22@ Barcelona. 10 years of urban renewal*, 2011
•Baxter, A., *The future of historic Cities., journal of architectural conservation 2000*. 3:20-27
•Behrens-Abouseif, D., *The Cairo Heritage: Essays in Honor of Laila Ali Ibrahim*, Cairo, Egypt: The American University in Cairo Press 2000.
•Bianca, S., *Urban Form in the Urban World, past and present*, London 2000.
•Crinson M., *Urban Memory,History and amnesia in the modern city.*
•Dongming L.,Yunhe P., *Digital Preservation for Heritages,Technologies and Applications*, Zhejiang University Press, Hangzhou 2010.
•Drummond, James. “Financial Times.” The Great Conservation Debate: IslamicCairo 22 Oct 2003: 6-8.
•Gharai F.,T*he value of Neighbourhoods: A cultural approach to urban design*, University of Sheffield, Department of architectural studies1998.
•Hillenbrand, Robert. “Studying Islamic Architecture: Challenges and Perspectives.” Architectural History 46(2003): 1-18.
•Historic Cairo Studies and Development Center, *Conservation and Development in Historic Cairo, The rehabilitation of Al Hakim Mosque area in Gammaliya*, The Supreme Council of Antiquities SCA (2002).
•Joan B., *The old town of Barcelona a past with a future, universitat Politecnica de Catalunya*,2003.
•Kandi B.,William L. Hall, *Sustainable land development: decision consequence analysis*, 2010.
•Lamei, S. “Insights into Current Conservation Practices.” Museum International 57(2005): 136-141.
•loannides M., Fellner D. and Diofantos G. Digitl Heritage,*Third International Conference*, Lemessos, Cyprus,EuroMed 2010
•Luciano S., *The sense of history, continuity and discontinuity of Rogers Ernesto N.*, Unicopli, 1999.
•Lynch, K. (1981) *A Theory of Good City Form*, Cambridge, Mass: MIT Press. (71-98)
•Maury, Bernard. “Conserving and Restoring the Harawi and Al-Sinnari Houses in Cairo.” Museum International 53(2001): 22-35.
•Moudon, A. N., *Urban Morphology as an Emerging Interdisciplinary Field*, The jornal of Urban Morphology 1997.
•Noweir, S. Panerai, Ph., *Cairo: Old Town in Environmental Design* ,1998.
•Panerai, Ph., Ammar, L., Le Caire, *Observations sur le tissue urbaine de la ville ancienne*, LADRHAUS, Paris 1991.
•Panerai, Ph., Depaule J.-Ch., Demorgon M., *Elements d’Analyse Urbaine*, Bruxelles, AAM 1980.
•Raymond, Andrea, *Le Caire*, Paris Fayard 1993.
•Rghei, Amer S., and J. G. Nelson. “The Conservation and Use of the Walled City Of Tripoli.” The Geographical Journal 160 (1994): 143-158.
•Sedky A., *Living with heritage in Cairo*, Area conservation in the Arab Islamic city, AUC Press 2009.
•Shane D.G., *Urban design since 1945. A global perspective*, Wiley, Chichester (UK), 2011
•Shane D.G, *Recombinant urbanism: conceptual modelling in architecture, urban design, and city theory,* Wiley-Academy,Chichester, 2005
•Sims D., *Understanding Cairo*, AUC Press 2010.
•Sutton, Keith., and Fahmi, W. (2002). *The Rehabilitation of Old Cairo*, Habitat International. 26, 73-93
•The Venice Charter, IInd International Congress of Architects and Technicians of Historic Monuments, Venice, 1964
•Tiesdell, S., *Revitalizing historic urban quarters*, London 1996.
•Trancik, R., *Finding Lost Space. Theories of Urban Design,* New York 1986.
•UNDP., *Rehabilitaion of Historic Cairo*, Supreme Council of Antiquities 1997.
•UNESCO., *Recommendations Concerning the Safeguarding and Contemporary Role of Historic Areas* (26 November 1976),in Conventions and Recommendations of UNESCO Concerning the Protection of the Cultural Heritage,Paris 1983. 191-208.
•UNESCO., *Change in Continuity: Concepts and tools for a Cultural Approach to Development*, Paris,Vendome 2000.

[1] D.Rodwell, Conservation and Sustainability in Historic Cities, 2007.
[2] R. J. Gittel, Renewing cities. Princeton University Press, Princeton,1992.
[3] Freitas, Dos monumentos arquitetônicos aos sítios históricos urbanos. Dissertação de Mestrado, MDU/UFPE, Recif,1992.
[4] L. Kamal-Chaoui, Director Public Governance and Territorial Development, OECD. Debate on
“Urban policies and the right to the city”, UNESCO, Paris, 18 March 2005.
[4] Wataru IWAMOTO, UNESCO international seminar , July 2007.
[5] COMOS, International Charter on the Conservation of Historic Towns and Urban Areas , 1987.





Carlo Alessandro Manzo
Seconda Università of Napoli, Italy

Architectonical headlines for the redevelopment of the Modern residential areas

1.The architectural point of view

The redevelopment of neighborhoods with public residential architecture is particularly significant in terms of the preservation of modernity and has now become standard practice in Italian architecture. The distinctively new feature lies in the fact that the redevelopment does not concern individual works but entire urban systems or fabrics whose significance emerges more clearly in the urban layout rather than the stylistic aspect of architecture, based on its serial nature (easily dismissed as a synonym of monotony). These settlements, which are often large in scale, have a widespread quality which should be preserved, both as cultural heritage and as a primary use good. The frequently problematic social composition and the need to refurbish the existing residential accommodation, suffering from wear and lack of maintenance, have important implications. This situation makes it necessary for architectural redevelopment to be carried out within a framework of complex strategies of revitalization and renovation.

The redevelopment of public residential neighborhoods has been tackled in recent years with different levels of transformation depending on the approach to urban planning. On the one hand, there is a tendency in Europe to demolish buildings, motivated by a rethinking of the very idea of the large neighborhood, which is criticized for the lack of individuality and the high density of its distinctive features (towers, vertical residential units, etc.), quite apart from any architectural considerations. In the opposite direction, there is a desire for restoration which, apart from economic reasons and population density, seeks to prevent the demolition work from cancelling an important part of the rationalist experience. This latter approach seems more stimulating because it expresses the founding principles of the modern rationalist city and the figurative coherence of its architecture.

The experience of council housing during the twentieth century has created an established urban landscape, familiar to our way of experiencing and inhabiting the city, which is also portrayed in art, cinema and literature. In terms of the techniques employed and the composition, the approach to restoration is motivated by criteria of environmental sustainability and efficient land use. Indeed, various schools of thought on residential architecture are proposing again compact designs with concentrated densities. These represent convincing reasons for resisting indiscriminate demolition proposals by means of which the supposed drive towards renewal often masks interests in property speculation (as in the recent case of Tor Bella Monaca in Rome).

In terms of the quality of the urban layout and the architecture, many public residential neighbourhoods were built in Italy during the post-war period by established architects (such as Quaroni, Ridolfi, Fiorentino, De Renzi, Moretti, Cosenza, Aymonino etc.); they represent a heritage of historical works of the modern city which should lead us to consider them as a resource for future urban transformations. A selective approach to restoration should safeguard the identity and character of this architecture, while offering a critical reinterpretation of outdated aspects.

In order to address this issue properly, it is important to bring specializations together within a unitary approach to architectural design. This is vital for ensuring that the various components of structural and technological refurbishment, and environmental sustainability, are incorporated within a truly architectural perspective also related to the urban context. Even if the renewal of these recently built settlements is considered as “modern restoration”, any proposed transformation should interpret the original features following the compositional approach behind the original work. This idea of critical continuity should not be restricted to mimesis and restoration but should consider the possibility of pursuing alternative paths and achieving unexpected results.

2. Intervention criteria within the European context

In terms of the redevelopment of public residential neighbourhoods, European experiences reveal converging opinions on the general objectives – sustainability, accessibility, attention to the landscape – but huge uncertainties about the architectural proposals and the techniques for implementing them. The redevelopment criteria can be summarized in a few points: the provision of services, a mixture of functions and typologies, individuality and distinctiveness of the various elements.

The redevelopment processes follow two approaches: on the one hand, the general rethinking of free spaces and communal areas and, on the other hand, new techniques for renewing and transforming existing buildings, including objectives linked to energy-saving. In both cases, the question that cannot be avoided concerns the architectural nature of redevelopment proposals, the themes and ideas of the city towards which transformation intervention should be targeted. Additions, inserts, infilling, changes in surfaces and colours, land-modelling, are not just technical aspects but are an integral part of compositional procedures on different scales. These procedures have now become established in the modernization process of many European cities, from Vienna to Hamburg, from Amsterdam to Berlin, both in the transformation of nineteenth century and twentieth century blocks of flats and in the first “modern” neighbourhoods of public residential architecture.

The way in which a neighbourhood or a block is modified in the redevelopment process does not depend on the scale of intervention but on the distinctiveness of the elements with which one operates. In a clearly defined morphological structure, the addition of features required by new residential standards (balconies, glass lifts, roofing etc.) concern *secondary transformations* which may be debatable in terms of form but which do not alter the general architectural character. However, simply painting the building a different colour can transform it significantly. Until the 1970s, the large Spangen open courtyard block, designed by Brinkmann in 1937 in Rotterdam, had the appearance of a compact building made of dark clinker broken up only by grey bands of concrete which emphasised the horizontal nature of the landings. With the change in the composition of the inhabitants, marked by a different ethnic majority, caused by mass immigration, the settlement was painted completely white so that it took on the intriguing appearance of an Arab neighbourhood. In former east Berlin, the restoration of the 1950s residential blocks of flats built using large prefabricated system was given a colourful facelift which transformed the harsh grey volumes by painting them in implausible pastel shades, transforming simple and austere forms into grotesque ones. It is striking how this form of intervention is intended to erase certain ideological connotations of the socialist city, creating new ones of an opposite ideology.

I mentioned at the beginning of this article that the redevelopment criteria regard the increase in services and, in terms of the features, the greater typological variety, individuality and distinctiveness. Naturally, the priorities are affected by local conditions: in Holland the watchwords are differentiation, accessibility and safety. In France and Spain research has been carried out into the typological upgrading and development of public spaces. In France there has been strong criticism of the grand ensemble (housing schemes) which aims to reduce density and redesign green areas (as has happened in the restoration of the Aillaud neighbourhoods). In Italy there is a widespread request for neighbourhood utilities – frequently lacking – as well as the upgrading of green areas, public spaces and urban links. In order to reduce repetitiveness, considered to be the cause of disorientation and the lack of distinctiveness, redevelopment projects in Europe tend to introduce new hierarchies of urban layouts and more clearly marked differentiation both for routes and urban fabric, and also for architecture.

With regard to the theme of the public residential neighbourhood, many *Siedlungen* built in the twenties and thirties in German and Holland (Berlin Britz, Onkle Tom, Siemensstadt, Kiefhoek), in the latest years, have adapted the residential units to take account of the changing social structure which has seen the houses of working class families being replaced by middle classes and new professional and intellectual classes. In Rotterdam the small-scale accommodation designed by Oud for the Kiefhoek district have been joined two-by-two to increase the very small spaces imposed by *existenz-minimum*.

In the rearrangement of the housing areas, the large intensive blocks are supplemented (sometimes partially replaced) by low housing while the system of access and free spaces takes account of increasing safety needs. While a process of densification is taking place in the free spaces, a process of thinning out is taking place in residential housing blocks. In terms of redevelopment, as opposed to wholescale demolition, both the processes of densification and thinning-out should be used with great care being applied to the checking of density and volumetry, in order to avoid carrying out radical changes to the architectural idea of the neighbourhood in need of regeneration. For example, during the restoration of Stadt Villen Leinefelde-Worbis, a transition has taken place from the system of linear building typical of the siedlung, to a precise system of urban villas . Following the demolition of 7 intermediary modules, the line of prefabricated blocks with a length of 180 m. was transformed into seven urban villas of four floors with a reduction of over 50% of the volume and the accommodation units. However, the radical transformation is equivalent to total rebuilding: the drastic change in forms and values almost cancels any relationship with the pre-existing building and with the urban theme.

If it is agreed that the experience of the neighbourhoods should be addressed on the basis of their original features, then the criteria of intervention cannot be reduced to requirements inspired by the rhetoric of “contextualism”, the *reconnection* to external contexts, the incorporation of surrounding areas. Instead, it should work on the urban concept that underlay the original design. The original idea of the modern neighbourhood, which stems from the *siedlung* (literally a “colony”), is a morphologically independent part of the expansion of the city. Over time, reached by expanding cities, many housing areas have become reference points for later urbanization. The orderly nature of these housing areas has led to their gradual change of role in urban dynamics. Given the saturation of the architectural fabric following large-scale urban expansion, these districts, which were originally situated on the outskirts, have now become precious containers of suitable free spaces and can therefore be turned into incubators of public spaces, and creators of “new central spaces” which are crucial to the upgrading of surrounding urban areas.

This situation should therefore not lead us to water down the identity and autonomy. On the contrary, it is more interesting to enhance the differences of neighbourhoods and (paraphrasing the lesson of restoration according to which “*the monument is the master*”), accentuate their role as autonomous entities with a distinctive architecture, treating them as fragments of *historical modernity* which is significant for the contemporary city.

3. Items for the redevelopment of social housing built in the Sixties

The Prin- National Research Project (involving departments of the Universities of Roma-Sapienza and Roma 2-Torvergata, of the Second University di Napoli, and departments from the universities of Palermo and L’Aquila) has identified several “guidelines” for the redevelopment of public residential neighbourhoods in Italy, based on the study of several previously analysed European criteria. In many of the districts in southern Italy, the decision has been taken to focus on revitalising free spaces and increasing services, rather than the “fullscale” technological upgrading of the accommodation. This strategy derives from two converging reasons. The first is that the simplicity of residential types (when they have preserved a decent functional level) is an incentive for “soft” restoration, both for constructional reasons and because they should be considered as the evidence of an interesting phase of modernity. The second reason is that, for housing built before the (prior to the) eighties, the upgrading work generally proves to be uneconomic compared to demolition and reconstruction. It was therefore decided to avoid altering the appearance of council housing with window-dressing or extensive technological additions, and instead to enhance the distinctive features seamlessly with the original features and the design rule of the original work of architecture.

Some districts in central-southern Italy have been selected as significant sample areas for testing the redevelopment criteria. Considerable importance was given to the “structuring” role of the system of free spaces and courtyards which, in different ways, demonstrate the persistence of pieces of countryside which are inserted between the houses. The interweaving between green spaces and building is one of the innovative compositional principles of the modern city, and this has convinced us to focus on “courtyards” as the organisational core of the redevelopment of districts and as a central place for the services and productive activities. The various possibilities for intervention include the techniques of land modelling which incorporate the new spaces in underground structures, reducing the occupation of courtyards and increasing the surfaces of green areas. A key factor is given to productive green space with the aim of assessing, through practical, measurable experiences, the recent rise in popularity of urban vegetable plots and gardens.

In the Ina-Casa “Luigi Vanvitelli” district in Caserta, (designed in 1963 by a team led by Mario Fiorentino) made up of rows of buildings and tower blocks, an important role is played by the structure of free spaces made up of a system of courtyards arranged around a large central courtyard-garden. The intensive building that has saturated rural areas gives a special emphasis to the size and quality of the free spaces of the district compared to the widespread fragmentation of buildings. The main themes for modernizing the settlement concern the addition of services to the district and the upgrading of access to the houses. A similar criterion has been studied for the redevelopment of residential courtyards of the Alfa Romeo district in Pomigliano (Naples), where the designs for redeveloping the courtyards, currently occupied by illegally built shacks, plan an arrangement with vegetable gardens which follows the original design solution, assigning a vegetable garden to each house.

The criteria of densification have been adopted by inserting within the large courtyard several buildings that meet both the domestic nature of the district and the requirements of an urban scale. Thus the large courtyard-garden contains new buildings without contradicting the unitary character of the collective space. The additions are precious objects, linked to paths, barriers and excavations. They create new discontinuous profiles which break up the view of the continuity of the large walls of the buildings. In the “a pilotis” groundfloor area of the Vanvitelli district, densification involves the inclusion of small volumes designed to act as *social-rooms* or shops. In order to resolve the problems of access to the houses, new structures are created for the lifts which are directly grafted onto the balconies of the individual houses, creating new entrances to the residential units. This solution expands the balconies with brise-soleils (sun breaks) and vertical gardens, creating a discontinuous design which partly breaks up the structure of the original facades without hiding them. Some architectural designs of Vanvitelli courtyard solution were elaborated within Urban project Workshop leaded by C. A. Manzo, with the graduate Maria Antonia Giannino and with Andrea Santacroce, and Francesca Colella.

4. Redeveloping a residential neighbourhood: Tor Bella Monaca

An interesting example is the Tor Bella Monaca district, a large settlement of over 25,000 inhabitants built in Rome in the eighties. In contrast to the design of Leon Krier presented by the council administration of Rome which plans for demolition and rebuilding, various Italian university departments have developed studies and proposals for redevelopment.

Despite certain weak points, Tor Bella Monaca has a clear structure “divided into distinct parts”, a significant number of free spaces and a carefully structured typological composition of houses which (when suitably refurbished and joined to low houses) can play an important role in the relationship between the metropolis and the surrounding countryside. The mixture of functions and typologies (lines, courtyards and tower blocks) enables an effective relationship between land, open spaces, infrastructure and buildings which, in the city council design, was entrusted solely to the building-road relationship. Indeed, the Krier design, supported by the council administration, proposes a densely inhabited residential district of a nineteenth century

mould with an emphasis on single function residential units, despite the problems of sustainability and extensive consumption of the Roman countryside.

Instead, by following a perspective based on redevelopment, it is possible to count on the fact that currently almost 40% of the open spaces of Tor Bella Monaca do not have a definite purpose and can be used – using the criteria described above and without further consumption of the countryside – for a range of purposes such as private offices, shops and craft centres, and services. It is therefore possible to densify and build on built-up space. With the construction of spaces for work activities and private services, using the experience of project financing; services on a scale with the urban sector (library/media centre, multiplex cinema, etc.); services on a scale suited to the district (for the elderly, children etc.), residences for different users (students, temporary workers, co-housing, etc.), it is also possible to "redesign" current public residences with different sizes of accommodation and services.

In the "redants" system designed by Barucci and Passarelli in the R5 sector, the proposed transformation criteria concern both the rationalisation of existing housing in residential courtyards, and the inclusion of structures for the service industry in courtyards facing in the direction of the city. To overcome the problems of the weak points in the sector (the presence of housing on the ground floor overlooking the street, the lack of differentiation of the residential types and the lack of low houses), several priorities of the programme were identified in: a) reinforcement of the features and quality of the urban layout creating green corridors; b) creation of a "new central space" by adding new district service and joining the two sides of the sector; c) varying the range of residential types by introducing, in the large courtyards facing the countryside, terraced houses with gardens and houses with patios; d) replacing the accommodation in the lower floors of the courtyards with service industry functions.

Bibliography

AA.VV., L'architettura Ina-Casa, 1949-1963. Aspetti e problemi di conservazione e recupero, a cura di R. Capomolla e R. Vittorini, Gangemi Editore, Roma 2003.

AA.VV., *Abitare il futuro. Città quartieri case* –Mostra Saie Bologna, Bema Edizioni, 2005

AA.VV., *Città pubbliche. Linee guida per la riqualificazione urbana*, coord. Paola Di Biagi, Bruno Mondadori Editore, Milano-Torino 2009.

Gruis Vincent, Riccardo Francesca, *Social Housing renovation in Italy: Which solutions can be found in Dutch Housing management model?*, ENHR International Conference "Suitable Urban Area", Rotterdam 2007.

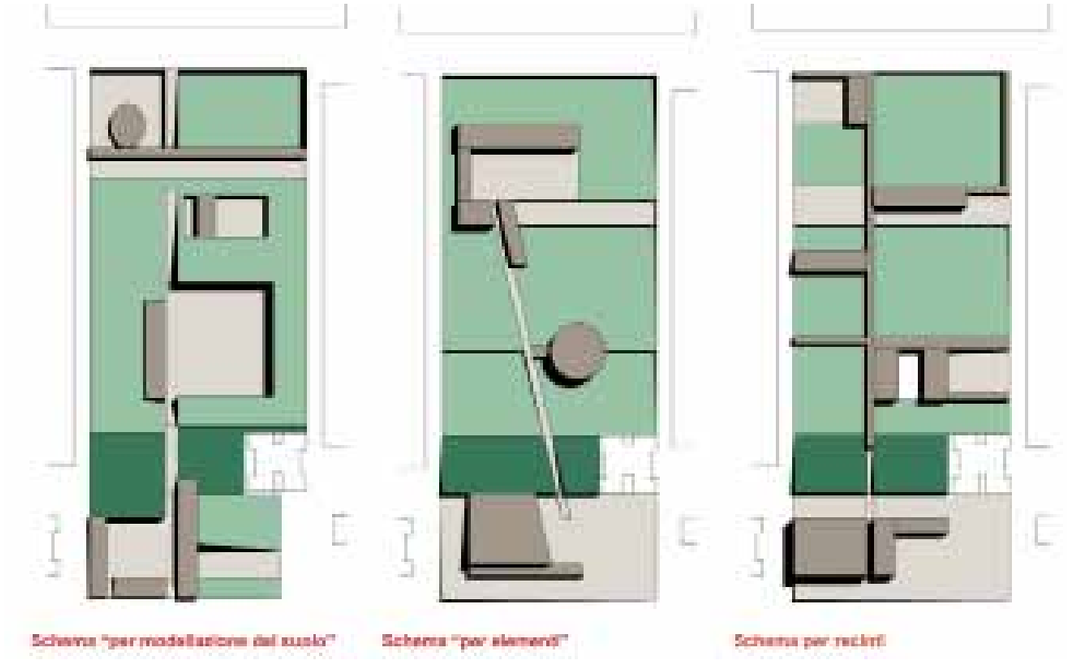
Licata Gaetano, Da Plattenbau a Ville urbane, in Lotus 132, 2007, pag. 66.

Manzo Carlo A., *Inserti urbani*, in AA. VV. "Inserti Urbani" a cura di C.A. Manzo e A. Santacroce, Edizioni Kappa, Roma 2008.

Witherford, Watson, Mann, *Densification and new Social Interaction*, in «Lotus» 147, 2011, pp. 58-63

Legend of pictures

01-L.Vanvitelli social housing area,(Caserta, It). Schemes for the main courtyard densification (C.A.Manzo, with A. Santacroce)
02- L.Vanvitelli social housing area,(Caserta, It). General north view (M.A. Giannino, rel. C.A.Manzo)



Alessandro Massarente
Università di Ferrara, Italy

Recomposition's paradoxes
A research case study on a concert-hall in Ferrara

The urban block hosting the "Girolamo Frescobaldi" music school in Ferrara is in an area in the vicinity of the Estense castle. The first recorded settlements in this block (an oratory chapel and a church) date back to 1295. During the first half of the 15th century, the structure of the religious house within the complex was transformed into the new "Arcispedale Sant'Anna" hospital, with construction of the first large extension and of the main ward (the "Prima Sala", or first hall), which then became the concert-hall of the Music school.

Following construction of the "Addizione Erculea" extension and after the Giovecca canal had been covered, at the close of the 15th century, large areas belonging to the hospital were sold, and soon occupied by new constructions. The hospital was enveloped in a denser urban fabric, which prevented extension work and gave rise to the first hygiene inadequacy problems relating to the premises.
During the early years of the twentieth century, the spaces were found to be insufficient, and the hospital was finally transferred in 1927 to a more appropriate area, and the premises were abandoned. At that time, urban planning was already under way for a new traffic plan, with work on the entire area.

The town plans of Ciro Contini and Carlo Savonuzzi

The thoughts and projects emerging during those years, were summed up in the "Piano Regolatore e d'Ampliamento della Città di Ferrara e sobborghi" (provisions for planning and extension for the city of Ferrara and suburbs) drawn up by the engineer, Ciro Contini. The final Contini plan was unveiled in 1926. However, it was not approved. In 1930 the hospital and the municipality therefore delegated the task of planning the area formerly occupied by the hospital to the engineers, Girolamo and Carlo Savonuzzi.

As a result of various developments taking place in the area over a very long period of time, the large block had reached the point of saturation. The block consisted in a variegated set of buildings with various uses, and of various sizes and typologies. Today's palazzo Sant'Anna, toward corso Giovecca, provided the entrance to the architectonic complex. The first courtyard led to the "Prima Sala" with its monumental entrance and another building to the right, featuring a stairway. The adjoining palazzo Roverella stood to the west. To the left, the arcade of the old cloister remained.

Another courtyard, immediately to the north of the cloister, was flanked by service buildings and by the large "Sala degli uomini" (men's ward), which, since it formed an extremely long rectangle, combining with the volume of the "Prima Sala", conferred upon the hospital its characteristic T distribution. The consistency of the complex had therefore remained practically unchanged since the time of the plans drawn up by the surveyor, Pietro Colla (1874).

According to Savonuzzi's preliminary proposal, presented in 1931, it was instead envisaged that the form of the area of the crossroads should be simplified, in comparison with the first draft of the Contini plan, to become a space which was practically a square, with converging streets that should each be aligned with a side, in a vortical arrangement.

However, this plan was modified in January 1932, with the work already under way. The archaeology and fine arts Superintendency insisted that the "Prima Sala" of the old hospital and its entrance should remain fully intact. To make way for the new street, it was therefore decided to demolish the buildings which were once wards and an infirmary to the east of the S. Anna square. This freed up the side of Palazzo Roverella. Casa Michelini on corso Giovecca and other service areas immediately adjoining the eastern wall of the "Prima Sala" were demolished.

Carlo Savonuzzi and "the citadel of culture": town plan and architectonic project

A number of public buildings designed by Savonuzzi – and built under his supervision from 1935 on – formed the crossroads as set forth in the town plan initiative which saw the light in 1930. Built over a decade, these buildings (the Alda Costa School, the natural history Museum, the Music school with its new concert-hall, and the Railway workers' Recreation centre with its cinema) came to form what can truly be described as a "citadel of culture".

As a result of the demolition work of 1931-32 – during which the building to the right of the entrance to the courtyard of the former hospital and the buildings located to the east and immediately adjoining the "Prima Sala" were knocked down – the traffic routes and configuration of the urban block were profoundly altered.

The very long men's ward room was divided into two parts by the opening up of via Boldini. One part was mainly occupied by the cinema of the workers' Recreation centre and the concert-hall stage. The other part was occupied by the building hosting the new natural history Museum.
The facades of the surviving buildings were all severely compromised by these operations. Although dismembered, in the final and definitive configuration of the monumental complex the urban block of the 15th century hospital nevertheless maintained a system of relations which provided links between the various bodies: two wards with independent access systems and roofings underscore the stratigraphic succession, a set of annex bodies of various sizes and heights, accessible from the courtyard spaces and internally linked to the main spaces.
This is corroborated by studies that our research group has developed of the roofing systems, whereby it could be established which parts were effectively preserved and which parts were modified, in part or wholly.

Where possible, Savonuzzi's preference was to maintain the footprint of the fragments of the remaining buildings, while renovating their interior and exterior appearance. The idea was to mask the old structures with brick and stone cladding surfaces, and natural and artificial stone cornices and mouldings.
The natural history Museum was thus created through adaptation, terminating in 1936, of a part of the volume of the men's ward remaining to the east of via Boldini.
Furthermore, the new building for the workers' Recreation centre, the "Opera Nazionale Dopolavoro" building, would cater both to recreational needs (film shows, reading, festivities) and public utility needs (public baths and spaces for meetings), adequately hosted in what remained of the volume of the former men's ward.

The project plans stored at the municipality's historic Archive show that, over and above the various prospected solutions for the interiors, Savonuzzi's approach to design work was to conserve existing relations between main and secondary spaces and volumes. The secondary spaces were for services and connecting systems.

The concert-hall in Savonuzzi's project

The work on the great "Prima Sala" of the former hospital and its transformation merit discussion in their own right. The work, which led to configuration of the space of the future concert-hall, and which was planned in 1934, was completed only in 1948.
The project foresaw musical events, for audiences of about 400. An area was also to be provided for the functions of the Music school.

The monumental entrance leading in from the small Sant'Anna square was to remain. With its terracotta stairway, the audiences would pass through a filtering area and hall (with cloakroom and box office services) to the entrance to the stalls and the balcony, by two symmetrical stairway ramps. These areas were created very precisely within the pre-existing volume. Indeed, the old western wall and the eastern wall remained under the new cladding. The 15th-century entablature was visible at various points on both frontages, while the openings were modified. On the wall of the room toward via Boldini, eight large openings were created (plus a blind one, included for facade compositional purposes), to create what Savonuzzi called "a quasi-ecclesiastic atmosphere".
The more critical project stages (acoustic design work on the room, drawings for construction and decorative details, ventilation, heating, lighting and interior décor) regard the following years.

Spaces for shows and similar events in historical buildings

Savonuzzi's design for the "Prima Sala" of the 15th-century hospital, as the new concert-hall of the Music school, is just one of some projects we may note, involving transformation of historic spaces into buildings for shows and similar events. The history of architecture provides significant examples, above all during the 20th century.
The Teatro Farnese, in the Palazzo della Pilotta in Parma (G. B. Aleotti, 1618), and the music hall in the Altes Gewandhaus in Leipzig (1781) illustrate a tradition which frequently had recourse to the double shell compositional technique (contemporary content in a pre-existing container), for the purpose of creating spaces for music. These spaces were characterised by specific forms, dictated by the laws of acoustics and by considerations governing theatrical events. Indeed, given the proportions and size relations, historical buildings of this kind are frequently unsuitable.

Louis I. Kahn used the metaphor of the violin (auditorium and stage) and violin case (foyer and other service spaces for musicians and members of the audience) to refer to composition of a number of his important projects and as a theoretical definition of certain pertaining principles[1].
Berlin's Großes Schauspielhaus theatre (Hans Poelzig's transformation of the Circus Renz arena) is an example dating back to the 1920's of how spaces of extraordinary figurative complexity, characterised by decorative stratification for such specific functions as these, may be conceived and realised.
As illustrated by some studies[2], examples of re-use of spaces for such events are to be found in various types of historical buildings, with even greatly varying characteristics. In northern Europe, given their size relations, a number of such buildings (used for indoor circuses and sports activities) were found to be appropriate[3].

On the other hand, in southern European countries, churches, courtyards of palazzos and convents are transformed to host religious or non-religious events.
Given their iterative disposition and the significant sizes of their component parts, industrial buildings provide structures which are highly suitable for hosting the forms necessitated by musical and theatrical events[4]. Market and warehouse premises also provide interesting instances of re-use of this kind[5].
Spaces for such events are less frequently inserted with any degree of success in buildings characterised by specialised uses, or by markedly characteristic forms. Examples include former exchanges or bourses, railway buildings and planetariums[6].
From the viewpoint of the history of 20th-century architecture, Carlo Savonuzzi's project for re-use of the "Prima Sala" as a concert-hall belongs to this tradition. The project's historic significance, in this sense, is to be ascribed both to the town planning project (of which it is a part) and to the project's own particular characteristics (compositional inventiveness, technical innovation).

The main consideration regards the extraordinarily long form of this old hospital space. Such a space would have to be considered inappropriate for such events, were it not for the work carried out by Savonuzzi – and conducted with finely discriminating care and attention – for the purposes of re-composition of the internal shell (thus transformed into a sort of telescopic machine culminating in the stage and the acoustic chamber).
A further consideration regards experimentation with materials which were innovative at that time – "acoustic" plasterwork, consisting in hydraulic lime and asbestos fibres, with construction on a supporting structure described in the documents as consisting in two variants (lathing and eraclit or wooden centerings and eraclit panels). This work, dating back to the period in question, was experimentally tested by the specialised laboratories of the electrotechnical institute, "Istituto Elettrotecnico Nazionale Galileo Ferraris" in Turin, which concluded that the acoustic characteristics of the hall were optimal (this hall may perhaps be considered the key venue for 20th-century music in Ferrara). These results were obtained through employment of "flexibile" plasterwork with varying acoustic absorption characteristics (variation depended upon the proportions of asbestos content, selected for the purpose of attaining greater control over distribution of sound energy, thus enabling control over perception of the musical event).
Technical innovation led, in 2001, to a situation which was as interesting as it was paradoxical. Since the asbestos had to be removed, for health inadequacy reasons, the concert-hall was initially closed to the public. These circumstances underscored the fact that conservation was an arduous and indeed impractical task, in regard to the material itself and therefore also in regard to the form that this material had taken on.

The research project:
between restoration and re-composition

Research into the concert-hall and the complex of the former Sant'Anna hospital as part of Ferrara's heritage was conducted by a group of teachers from the University of Ferrara.
Within the ambit of actions conducted over the last few years by the Municipality of Ferrara and by the savings bank Foundation, "Fondazione Cassa di Risparmio di Ferrara" to turn to best account this heritage, a key project was restoration of the concert-hall of the "Conservatorio di Musica G. Frescobaldi" Music school, and re-use of the hall as a venue for teaching and cultural activities, and for conferences. The premises have been State property, as part of the public domain, since 1970.

In accordance with the provisions of an agreement reached in 2006 between the Music school, the Foundation and the Municipality of Ferrara, it was decided that the Municipality's technical staff should take on the tasks of design and execution of the project. It was also decided that the technical staff should be backed up by the engineering and architecture Departments of the University of Ferrara.

Following stipulation of this agreement, a research contract[7] was drawn up by the parties concerned and the Architecture Department, in turn, governed by a research programme. The programme (under myself as scientific coordinator) consisted in the following activities: study of urban context and of the architectonic complex made up of the Music school and adjacent buildings; analysis of the hall and adjacent spaces in regard to the requisites (functional, structural, technological, relative to installations, acoustic and relative to safety) applying to these spaces; and providing back-up for the purposes of arriving at a final draft for restoration of the concert-hall, covering various ambits (architectonic, technological, structural, relative to installations and acoustics), also through recourse to the services of external specialists or researchers[8].
On this occasion, as also in other cases, research activity was based on fruitful interaction with teaching activities. Within the ambit of preparation of degree theses, opportunities frequently emerge for in-depth consideration of questions relating to method (these opportunities, in turn, are of considerable use in efforts to formulate the framework of prospective research work).
One of these degree theses[9] (supervised by Alessandra Marino, formerly a contract teaching staff member in the field of architectonic restoration at the Faculty of Architecture in Ferrara) provided the occasion for investigation and analysis in regard to such a challenging theme as this.

The research work in question was devoted to the historic architectonic complex of the "Arcispedale Sant'Anna" hospital. For the reasons outlined above, Savonuzzi's intervention may be considered a work not so much of restoration as of architectonic re-composition. Savonuzzi turned the space into premises for a Music school and for a workers' Recreation centre, with two splendid halls – the concert-hall and the hall which would then become cinema Boldini.
As emerged from the investigations conducted for the aforesaid degree theses, and as confirmed by the in-depth studies conducted within the ambit of research, the work entailed overall urban re-composition, and included the old hospital block in a single process of transformation, leading to the production of a new structure made up of streets and urban spaces within which fragments of pre-existing buildings were skilfully incorporated.

Within such an important context as this, the task of returning the concert-hall to its appropriate functions in line with current standards and requisites was immediately seen to be task which was as complex as it was fascinating (the hall had been closed for about 10 years, due to the presence of asbestos in the interiors). The task was a challenge for the various areas of expertise, considered singly, and one which, more importantly, would engender interaction and, possibly, integration among the various disciplines involved.

Taking Savonuzzi's lead, the restoration project was thus drawn up as a plan for global re-composition of the spaces of the concert-hall, it being understood that these spaces would not necessarily be confined to the concert-hall and stage, and, indeed, that the project would impact the hall's services areas, and spaces for artistes, for management and for the services available to the public.
During research, the most advanced investigatory techniques were applied to arrive at a three-dimensional cognitive model of the hall and of the complex hosting it[10]. The idea was to draw up a project for restoration of the 'existing' form of the hall through scientific control of its 'new' form, with use of contemporary materials similar to the original modern materials, and with use within the hall of acoustic, lighting and air-conditioning technologies.

Bibliography

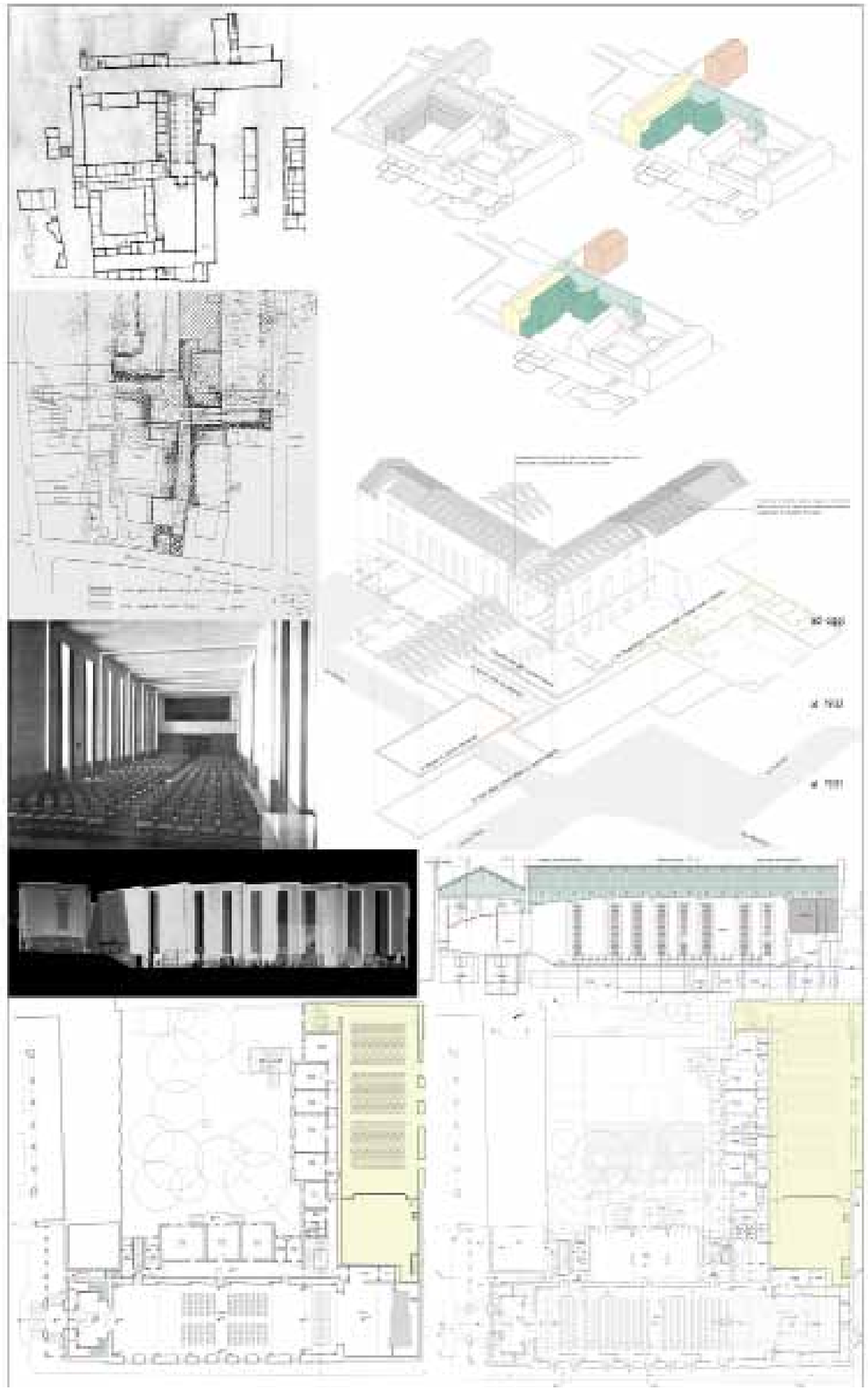
Forlani M.C. (ed), *Spazi per lo spettacolo e riuso. Una ipotesi di attrezzatura territoriale*, Gangemi, Roma, 1999.
Kahn L.I., *I Love Beginnings*, Lecture at "The Invisible City", International Design Conference, Aspen, Colorado, June 19, 1972; in Norberg-Schulz C. (ed), *Louis I. Kahn idea e immagine, Officina Edizioni*, Roma, 1980, pp.137-146.
Massarente A., *La valorizzazione dell'antico e il progetto d'uso. Metodi e strumenti di lettura e trasformazione della città*, in Franco C., Massarente A., Trisciuoglio M. (eds), *L'antico e il nuovo. Il rapporto tra città antica e architettura contemporanea*, Utet Università, Torino, 2002, pp.3-20.
Massarente A., *Progetto di restauro dell'Auditorium di Ferrara*, in Massarente A. (ed), Quaderni ferraresi. Annuari della Facoltà di Architettura di Ferrara 2005-2006, Alinea, Firenze, 2008, pp.128-129.
Massarente A., *Progetto di restauro dell'Auditorium di Ferrara*, in Faggioni E., Manici M., Padovani A., Taddia F. (eds), *Restauro. Economia della cultura*, Atti del Salone dell'Arte del Restauro e della Conservazione dei Beni Culturali e Ambientali, Convegno UNIVER-CITY. Ferrara Città e Università: un nuovo modello di integrazione università-territorio, Ferrara, FerraraFiere, marzo 2009, ACROPOLI, Bologna, 2009, pp. 214-215.
Pesci L., Raco F., Moderno, *Per la riapertura dell'Auditorium del Conservatorio G. Frescobaldi: una ridefinizione organica nell'isolato dell'ex Arcispedale di Sant'Anna*, degree thesis, Marino A., Alberti A., Balzani M., Massarente A., Mazzacane S., Barbaresi L., Faculty of Architecture, University of Ferrara, a.a. 2004-05.
Pesci L., Raco F., Moderno, *Per la riapertura dell'Auditorium del Conservatorio G. Frescobaldi: una ridefinizione organica nell'isolato dell'ex Arcispedale di Sant'Anna*, in Fabbri R. (ed), *Ferrara architettura 3 Novecento*, Ferrara, 2008, pp. 35-58.
Yanni C., *Fine Arts Center, School and Performing Arts Theater*, Fort Wayne, Indiana, 1959-73, in Brownlee, D. B., De Long D. G. (eds), *Louis I. Kahn. In the Realm of Architecture*, The Museum of Contemporary Art / Rizzoli, Los Angeles / New York, 1991, pp.346-351.

Legenda

1 Plan of main entrance level of Arcispedale S.Anna hospital, Pietro Colla, 1874
(ASFe Archivio di Stato di Ferrara, Archivio dei Periti Agrimensori, perito Pietro Colla, b.170, permission of Ministry of Cultural Heritage and Activities, Conc. n. 02/2012 del 19.03.2012)
2 Sketch for the urban plan of Arcispedale S.Anna hospital area, Carlo Savonuzzi, 1931 (ASFe Archivio di Stato di Ferrara, Archivio Arcispedale Sant'Anna, b. 953, permission of Ministry of Cultural Heritage and Activities, Conc. n. 02/2012 del 19.03.2012)
3 Volumetric schemes with main phases of transformation of the urban block of Sant'Anna hospital: a) before the realization of the crossroads, 1931; b) after the demolition of buildings to the east and immediately adjoining the "Prima Sala" (light green), 1935; c) after the raising of buildings (dark green) near the courtyard
4 Volumetric scheme with main transformations on interior and exterior appearance in comparison with the permanence of the roofing system of the former hospital in Savonuzzi's restoration project
5 Historical view of the concert-hall in the Music school, 1941 (in C. Righini, Il Liceo Musicale Gerolamo Frescobaldi di Ferrara, Firenze 1941)
6 View of the tridimensional survey model in cloud-points of the concert-hall interiors, 2006
7 Longitudinal section of the concert-hall in the restoration project, 2006-2008
8 Plan of the existent concert hall level
9 Plan of the concert hall level in the restoration project, with new entrance hall, foyer open to the courtyard, stage and musicians' service rooms.

Notes

[1] Fine Arts Center, School and Performing Arts Theater, Fort Wayne, Indiana, 1959-73. In Brownlee, D. B., De Long D. G. (eds), 1991.
[2] Forlani M.C. (ed.), 1999.
[3] Municipal circus (1920) in Douai (France); tennis club (Ballhof, XVIIth century) in Hannover (Germany).
[4] Maltings (XIXth century) in Snape (England); car factory Lingotto (1916-30) in Turin (Italy); brewery (1889) and mill (1913) in Zurich (Switzerland).
[5] Grain warehouse in Ivry (France); fish market in Marseilles (France); grain exchange in Blois (France); military arsenal (XIXth century) in Metz (France).
[6] Victorian exchange/bourse hall (1874) in Manchester (England); commercial exchange (1898) in Amsterdam (Netherlands); planetarium (1925-26) in Dusseldorf (Germany).
[7] From the title: *L'auditorium del Conservatorio musicale nell'isolato dell'ex Arcispedale Sant'Anna a Ferrara. Studi e proposte per il restauro del complesso di Carlo Savonuzzi* (The auditorium of the Music school in the block of the former hospital, Arcispedale Sant'Anna in Ferrara. Studies and proposals for restoration of Carlo Savonuzzi's complex). The research work was carried out between December 2006 and February 2008, through resources and structures of the research facility, "Laboratorio di ricerca ArcDes. Centro per lo sviluppo di servizi integrati di progettazione per la città, l'ambiente e il paesaggio" (ArcDes research laboratory. Center for development of integrated Architectural Design Programs for City, Environment, Landscape, Department of Architecture, University of Ferrara).
[8] The research group was made up of the following professors and researchers: Alessandro Massarente (scientific coordination for project), Marcello Balzani, Rita Fabbri, Gianluca Frediani, Vincenzo Mallardo, Sante Mazzacane, Architecture Department of the University of Ferrara; Roberto Pompoli, Engineering Department of the University of Ferrara.
The following is a list of the accredited researchers and collaborators who worked with the research group. Accredited researchers: Fabiana Raco (restorations and materials technology), Salvatore Alaimo (installations technologies and fire safety testing), Architecture Department; Andrea Farnetani (acoustics), Engineering Department. Study grants and contracts: Nicola Gambetti, Massimo Garutti (structures); Riccardo Pedrazzoli (surveys and design work), Architecture Department. Collaborators: Alessandro Grieco, Guido Galvani, Architecture Department; Filippo Casarini, Stefano Guidi, Donatella Basutto, Roberto Campaci, Stefano Campaci, Giulia Lodo. Consultants: Gianfranco Grillini (mineralogical-petrographic study of natural and artificial stone materials); Fabio Bevilacqua (state of repair of materials and restoration methodologies).
[9] Pesci L., Raco F., Moderno, *Per la riapertura dell'Auditorium del Conservatorio G. Frescobaldi: una ridefinizione organica nell'isolato dell'ex Arcispedale di Sant'Anna*, University of Ferrara, a.a. 2004-05.
[10] Through use of point cloud model laser scanner technologies and of traditional methods for surveying.



Deborah Middleton
Ball State University, Indiana USA

Instrumental Re-stitching and Perceptual Rotation: Spatial Recalibration Strategies for Monumental Parks in Historic Cities

Abstract

Contemporary monumental park design strategies synchronize the historic conservation of urban and social fabrics while simultaneously inspiring new identity, spatial development, and social transformation. Architects working in historic city contexts must elaborate design strategies that support the sensitive recalibration of the physical environment to conserve architectural monuments and urban fabric, while establishing the area as a catalyst for economic and social revitalization. This paper examines how two design proposals conceptualize spatial recalibration and elaborate design strategies for two monumental parks situated 'within' and 'on the periphery' of the historic cities of Riyadh, Saudi Arabia and Cairo, Egypt. These implemented design schemes are characterized by their instrumental and perceptual strategies, and related to different conceptualizations of urban transformation and conservation. The two design strategies are found to adopt both instrumental and perceptual approaches to recalibrate the spatial and visual configuration of the historic area. Design tactics seeking to increase patterns of movement between and to, an area, and tactics seeking to elaborate synchronic and a-synchronic structure for the visual configuration of an area are distinguished. These constructs may be related to concepts of development and conservation (local and global).

Introduction

Historically the design of the park and garden has aimed to organize both the physical and perceptual structures of space. Contemporary design strategies for monumental urban parks in historic cities aim to simultaneously balance the conservation of historic urban fabrics and create potentials for new development to revitalize distressed historic urban areas, ideally retaining their cultural vitality and traditions. To achieve these aims, design strategies often employ instrumental tactics, such as the re-stitching of the urban fabric, to enable stronger spatial flows,in tandem with the spatial framing of historic monuments to emphasize perceptual focal points and construct district identity.
The design tactics selectedcollectively embody and construct the reproduction, conservation and transformation of space as explicit and implied relationships. Their ability to recalibrate the underlying instrumental and perceptual spatial structure of a historic area is grounded in the realism of urban experience and its representation. Topographic spatial knowledge - frequently defined in design representation as the plan - or the cartography of site, contains operations of locating, positioning and individuating our positions in the world situating events, processes and things within a coherent spatial frame that identifies and bounds phenomena (Harvey, 2001). The selection of representational forms for design projects adjacent or in a historic site inform notions of urban landscape, and influence our knowledge of urban space, imposing a spatial order on phenomena (Harvey, D. 2001). These representational forms support new intentional narrative readings. The representational strategy constructs mental maps and memories of the city, which in themselves are novel constructions of spaces and visual relationships that never previously existed, and thus can be conceived as fictionalized deconstructions of the historic reality.

Instrumental and Perceptual Design Tactics

Instrumental interventions, as depicted within the space syntax field, stress theories of integration and connectivity of urban space as a foundational condition underlying vibrant city centers (Hillier, 1993). Strategies aiming to improve connectivity and integration of urban spaces conceptualize urban transformation as dependent upon variables of movement, connectivity and centrality. Urban re-stitching design tactics aim to induce spatial change by involving major or minor re-alignments of streets and their pattern of connectivity. Re-stitching strategies also ideally will increase spatial permeability, and frequently involve the integration of large and small urban centers or nodes, followed by the recalibration of axial street networks to improve movement, connectivity and integration. Hillier's theories of 'natural movement' and 'the movement economy' (Hillier, 1996), highlights the important generative relationship between axial structures and movement in revitalizing urban space. Urban re-stitching, an instrumental design tactic understood as the major and minor re-alignments of streets and their pattern of connectivity around internal central nodes and across the district, revitalizeurban districts by increasing a historic districts spatial permeability for movement to establish stronger transformation at the local urban level. Design schemes also formulate spatial composition where an overarching network of local spaces became related through axial avenues within a global system to express new spatial relations (Steenbergen et al, 2003).

Perceptual strategies are imbedded in designs seeking to realign urban space. Perceptual re-orientation as used in this paper, refers to a restructuring of the dominant point of view from which the city is approached and engaged, perceived and remembered as an image. Hillier has pointed out that in designing the spatial configuration of urban areas to express formal axial arrangements of space, symbolic or instrumental meanings may be implied (Hillier, 1996).Visual qualities associated with urban environments are closely related to the sequential changing of views when moving in an environment and corresponds to the construction of a city's imageability, memory and identity(Lynch, 1992). Thus,design strategies define the symbiotic relationship between the spatial structures configuration and the views constructed by the development of space, and its essential local and global relations.

The insertion of monumental parks within or adjacent to historic urban areas, frequently reconstructs the visual syntax of experience and perceptual representation of 'city through the views imbedded within new spatial structures.These new spatial configuration formulate a variety of visual experiences from perceptions of distance, permeability, and panorama, to enclosure and proximity, as well as synchronic and a-synchronic views. Distance is one visual syntactic construct afforded by the monumental park, which establishesa generalized perception of form, and privileges spatial knowledge through the collapsing of spatial layers. Distance also constructs a dialogue between flat and deep spaces, and calibrates views that allows for the close examination and exploration of an overall effect of a scene, deleting fine-grained details. Monumental parks establish relationships that result in an experience of the entire scene composition as visual panorama and afford comprehension ofthe diversity of topographic connections that link many dispersed sites.

Juxtapositions of Monumental and Historic Urban Space in Design Strategies

The two recently completed urban parks are analyzed to understand how they formulate a symbiotic development and conservation approach. The Al Azhar Park(2005) situated adjacent to the medieval city of Cairo Egypt, and the King Abdul Aziz Historical Center (1999), developed on the site of the former compound of King Abdul Aziz's Murabba' Palace, Riyadh, Saudi Arabia, employ two different approaches to contemporary historic city recalibration. Both landscape-urban design strategies aim to construct identity, revitalize and regenerate the adjacent historic urban fabric and community.

Al-Azha Park, Cairo Egypt)

The Al Azhar Park, completed in 2005, is a design developed by the Aga Khan Historic Cities Program. It is a recently completed signature development (a seventy acre park) located on the eastern periphery of the medieval city of Cairo. The 30-hectare park sites topography is monumental in its dimensions, scale and vertical height. At the northern end of the park, an Urban Plaza project, a mixed-use development (cultural facilities, museum, shops, and parking) is under construction. The project site is peripheral to the historic urban configuration, and is surrounded by numerous historic buildings, monuments, minarets, and domes of mosques. It is positioned adjacent to the historic Ayyubidperiod city wall, with the sites mass and position separating the community of Darb al Ahmar from the impoverished neighborhoodin the historic cemetery 'the City of the Dead' located on the eastern edge of the park.

The historic Ayyubid wall, constructed in 1171 by Salah Eddin to defensively surround the city is one of two boundary edges, which defines the project. The historic wall establishes the eastern limits of Darb al Ahmar. The walls historic character, scale, mass and continuous form, establishes a sharp contrast between the residential building fabric and historic medieval Islamic street configuration, and the newly constructed open space of the Al Azhar Park. Two principle streets define the other project boundary; the first is the highway that defines the site of the park on it two largest north and east perimeter edges. The second street is internal to the Darb al Ahmar district, which is used as a district boundary edge by both project proposals analyzed. Transportation hubs and market areas establish strong convergence points of movement, which may be considered as centering nodes. Transportation hubs are located on the periphery edges of the Darb al Ahmar district while markets are internally located.
The project intent aims to simultaneously restore historic Islamic monuments; upgrade the socio-economic environment, develops a new park, restores the historic eleventh century Ayyubid wall, and seeks to define urban structure spatial coherence.

(Middleton_deborah_1.jpg)(Middleton_deborah_6.jpg)
(Middleton_Deborah_3.jpg)

Fig. 1 Al Azhar Park, Cairo EG
Fig. 2 Al Azhar Park Visual Syntax

King 'Abd al-'Aziz Historical Center, Riyadh Saudi Arabia

The King 'Abd al-'Aziz Central Park and Murabba project, now known and the King 'Abd al-'Aziz Historical Center (KAHC) was conceived inaugurated in January 1999. Originally envisioned by the Arriyadh Development Authority to be a development that would extensively impact and transform the center of Riyadh over a period of 50 years. Ali Shuaibi, Beeah and RasemBadran developed the urban design master plan with the site; the landscape development was by Albert Speer and Partners.
The KAHC project was divided into five architectural developments carried out simultaneously. The design created two fabrics, vehicular roads that link the center to the city, and pedestrian strings of walkways and plazas that weaved the cultural buildings and parks to integrate the center into the social life of the surrounding city. Saudi Arabian planners decided to dedicate all areas as green parks, divide the large site and large buildings into small urban blocks that encourage pedestrians to penetrate and front all sides, increasing the visibility of plazas from surrounding streets, and domesticate the institutional character of the cultural functions of the center (BEEAH, 2010). The historic center grounds cover some 360,000 square meters (3,000,000 sq. ft.) and integrate many buildings and palaces, some renovated using traditional Najdi approaches with a modern synthesis of materials for preservation. The site was originally a walled area of palaces constructed beyond the date palm trees that surrounded the old mud-house settlement of Arriyadh. The new national museum covering 29,000 square meters is positioned directly to the east of the main square. A major Riyadh avenue, King Sa'ud Street runs through the complex, connecting it to the adjacent districts and intended to make it a part of the daily memory of the city (Clark,1999). A special park planted with 100 date palms symbolizes the centennial of the formation of the Kingdom is positioned across the avenue from the main public square, mosque and national museum complex. Included in the historic center is the Riyadh Water Tower, a city landmark, and the near red distinctive al-Hamra Palace.

The goal of the project was to create an inviting, open and accessible complex, which would be integrated within the urban fabric of Riyadh and to re-establish a center in the historic urban fabric which has become peripheral with the expansion of urban development towards the north. It is the first urban park complex to be developed in the heart of Riyadh's historic district, composing an extensive setting of open space, public squares, landscaped parks and gardens.

(Middleton_Deborah_2.jpg) (Middleton_deborah_7.jpg)
(Middleton_deborah_8.jpg)

Fig. 3 King Abdul Al Aziz Historic Center (KAHC)Fig. 4 KAHC Visual Syntax

Integration and Connectivity of Urban Parks: Space Syntax AxialGraphs

(Middleton_Deborah_4.jpg)
(Middleton_Deborah_5.jpg)
Fig. 3 Al Azhar Park Neighborhood Integration
Fig. 4 KAHC Park Neighborhood Integration

Analysis of Design Proposals

The analysis of implemented design proposals revealstwo primary design strategies, the spatial re-stitching of the urban fabric, and the perceptual re-orientation or rotation of the urban park visual syntax. Perceptual re-orientation is found to inform spatial recalibration in both strategies. The Al Azhar Park design focus primarily concentrates on constructing a panorama that establishes a global topographical network across the city to define the formation of identity with the Ayyubid wall and adjacent urban fabric composing the primary historic image. In comparison implemented proposals for KAHC combine urban re-stitching strategies across multiple scales within the historic center park site and with the adjacent urban fabric. Visual syntax structures emphasize integration and connectivity around internal central nodes within the park and across the district, establishing a stronger transformation at the local urban level.

Spatially the two parks engage the city in distinctly different ways. The Al Azhar Park is an isolated project with no physical connectivity established with the adjacent community of Darb al Ahar. The analysis of connectivity and integration reveals thatinstrumental connection between park and urban fabric is low specific to the Al AzharPark which is surrounded by multi-lane high-speed streets on three sides with one local street bounding the northern edge of the park. This is the point of engagement for the new planned Al Azhar visitor center.The park creates distance from the surrounding urban fabric and aims to conserve the urban fabric adjacent to the Ayyubid wall to reconstruction an urban image from 19th c. David Roberts Orientalist paintings of the historic city. Spatial integration with the surrounding urban fabric is constrained and not developed with absence of interactive spatial permeability between the park and the urban fabric of Darb al Ahmar. Economic development potentials for this distressed community is under developed and visual sightings of the park as seen from within the community are non-existent.

In contrast the urban park and site plan for the King Abdul al Aziz Historic Center, was designed based on an initial strategy to create permeability with the surrounding urban fabric. The park setting is characterized as open space surrounding multiple historic and contemporary building creating a historic architectural complex and center. This multi-faceted project presents an interesting case study in which to examine the extension of public open space into the surrounding historic and contemporary urban fabric. The historic elements of King Abdul al Aziz palace complex are imbedded within a large site,redefined to be situated as a public plaza surrounded by green landscaped gardens withover 100 palm trees and multiple water features and fountains. The park formsa backdrop to architectural elements. The park is highly utilized in the evening hours when the temperature is coolest, and forms an urban social oasis for the people of Riyadh. The KAHC proposal improves connectivity and integration across the variable urban fabric creating multiple focal points and highly interactive spatial permeability.

Concept of Conservation	**Al Azhar** Stabilize damaged existing buildings **KAHC** Re-imaging identity and formulating narrative history with architectural conservation/ National Museum on Site.	Strengthen social and business networks	Individual monument ~~[illegible]~~ wall; reconstruction of community housing to preserve urban fabric image. qa wall urban fabric interface.
Concept of Development	**Al Azhar** Primary focus is the housing unit **KAHC** Strong economic revitalization and development future for adjacent urban areas. Focus on enabling permeability of economic market.	No connectivity with adjacent urban areas to facilitate economic development.	New product/destination development to stimulate tourist economy for social economic gain.

Deborah Middleton
Ball State University, Indiana USA

Comparative Matrix

Interactive Matrix	Pre-Intervention Condition	Instrumental Strategy Re-stitching	Perceptual Strategy Re-orientation
Intervention Approach	AI Active Strong internal configuration as spatial environment. KAHC Strong internal configuration as spatial environment.	Focus is on place/ site position in relation to network. Proximity to other nodal points in the network.	Position is an institute site with an angle of vision rather than a geographical point. Destination specific. No historical value as destination.
Attitude Towards Conservation	AI Active KAHC	Stabilize and reconstruct damaged buildings Transformative conservation.	Aggressive conservation of monuments and peripheral edge urban [illegible] of 19th c. representational image found in D. Roberts Cairo paintings. Engagement with historic buildings.
Attitude Towards Development	AI Active KAHC	Passive economic revitalization [illegible] spatial development [illegible] Active economic revitalization and spatial development	Invents new panorama of Cairo. Recreates vista found in 19th c. [illegible] paintings Create green center for the city.

Descriptive Matrix	Pre-intervention Condition	Instrumental Strategy Re-stitching	Perceptual Strategy Rotation
Local Spatial Fabric	AI Active Strong internal configuration as spatial environment KAHC Strong internal configuration as spatial environment	Strong boundary conditions reinforced. Pedestrian movement focus along periphery edge [illegible] wall inside the park. Street intersection nodes expressed as centers, reorganization and regulation of existing traffic centers and paths, focus on vehicular – pedestrian movement.	Focus is on internal site position and its relation to peripheral edge spatial network (local/global); Position is an institutional site with an angle of vision rather than a geographical accessible point. Park views are engaged from surrounding urban fabric, create diverse [illegible] within park.
Global Spatial Fabric	AI Active Historical connectivity between historic [illegible] cemetery district, Cairo/ Giza across park site via [illegible] pedestrian paths. KAHC Moderate historical connectivity	No connectivity established between any historic communities on periphery of park. Disruption of connectivity to [illegible] cemetery district with Cairo/ Giza. Relational spatial integration strengthened through increased permeability across and between district; Focus on vehicular movement;	Multiple relational webs and observation position from which the park site - city is referenced. Perception of historic city constructed through rotation of cognitive image of the city. Poor to no perception of global urban spatial structure.
Approach to Spatial	AI Active Internal district oriented movement	Isolated topographical site and	Construction of strong clear

Configuration	configuration. Spatial configuration expresses clear differentiation between public and private areas within district. KAHC Bounded compound site.	functional building program. Multiple scales applied to complex hierarchical spatial development program.	boundary edge/boarders and spatial separation of community districts; Monumental scale addresses external global fabric configuration focus on peripheral transport structure. Spatial permeability within and across park site and to adjacent urban fabric.
Approach to Visual Syntax Configuration	AI Active Open site. KAHC Abandoned historic palace compound	Synchronic Multiple relational webs and observation are internally permeable with focus on historic buildings - park site – city connectivity.	A-synchronic - cumulative view shed [illegible] panoramic [illegible] in pictorial [illegible] visual details of surrounding urban [illegible] visual network to other nodal points in the urban system

Bibliography

Clark, Arthur. 1999. “Saudi Arabia’s Centennial: The Centennial’s Jewel -- Riyadh”. In Saudi Aramco, January/February.Available on Saudi Aramco Website. http://www.saudiaramcoworld.com/issue/199901/saudi.arabia.s.centennial.the.centennial.s.jewel.riyadh.htm.

Community Design, 1997, A Demonstration Project for Al-Darb al-Ahmar an Agenda for Revitalization

CDC. 1997, Collaborative Conservation and Development Proposals for a Historic District in Cairo. © Community Design Collaborative in collaboration with Near East Foundation

Darb Al-Ahmar Community Development Co. 2001, HCSP Technical Brief No.2 Conservation Planning in the Aslam Mosque Neighborhood, The Status of Activities of Urban Revitalization in Historic Cairo’s Al-Darb al-Ahmar, Historic Cities Support Programme, © 2001, The Aga Khan Trust for Culture.

Darb Al-Ahmar Community Development Co.2001, HCSP Technical Brief No.4 The Eastern Ayyubid Wall of Cairo, Study Findings and Recommended Conservation Programme, Historic Cities Support Programme, © 2001, The Aga Khan Trust for Culture.

Darb Al-Ahmar Community Development Co., *HCSP Technical Brief No.5 Urban Rehabilitation and Community Development in Historic Cairo: The Darb al-Ahmar Project*, Historic Cities Support Programme, © 2001, The Aga Khan Trust for Culture, 2001.

Giovanni, Carbonara, *The Integration of the Image: Problems in Restoration of Monuments pp.236, in Price, Talley, Historical and Philosophical Issues in the Conservation of Cultural Heritage*, © 1996, The J. PaulGetty Trust, The Getty Conservation Institute Los Angeles, 1996.

Harvey, David, *Spaces of Capital Towards a Critical Geography,* © David Harvey, Routledge Press, 2001.

Hillier, B, *Space is the Machine*, Cambridge University Press,1996.

Lynch, K., *Image of the City*, MIT Press, 1992.

Steenbergen, C, Reh, W, *Architecture and Landscape: the Design Experiment of the great European Gardens and Landscapes*, Birkhauser Publishers © Steenbergen, Reh and THOTH Publishers, Bussum, The Netherlands, 2003.

Talen, E., ‘The Spatial Logic of Parks’, Journal of Urban Design, 15:4, 473-491, 2010.

Milica Muminović - Vladimir Parežanin - Darko Radović
Keio University, Japan

Managing memory in city-Case study of complex of the Federal Secretariat for National Defense (Generalstab building)

Introduction

Research on the Generalstab building[1], designed by architect Nikola Dobrovic[2] should start with two aspect of its nature: being example of modern architecture- international style of Modern once and being monument of contemporary history now. Thus, author's conceptual aspiration about testifying to a time has just been confirmed. Namely, it is designed in order to illustrate the dramatic impression of a Sutjeska[3] Canyon River, an important place for the struggle of Partisan liberation army against the Germans in the Second World War (Vukotic-Lazar: 2002), the Generalstab building still follows authors' will of being time witness that speaks through its duration and existence. Plastic interpretation of the state ideological concept, materialized in the house of the Federal Ministry of Defense, has striven to provide endurance, strength and effort which the nations and nationalities have united within Yugoslav dogma. Writing about the building, Dobrovic emphasizes that the object is intended to highlight the *all important characteristics of defiant and brave nation [...] strength, enthusiasm and courage embodied in sculptural masses …* Once the heroic monument to the victims of success, today modern history, this building represents a transposed feature and image of constant destruction of one society.

Although the house of the Federal Ministry of Defense was built after the time of commitment to USSR and Yugoslav social realism and in the period of cold war when Yugoslavia was seeking for the position between East and West, the architect has decided to use pure international style, in form and morphologically defined by concept and context. The new Federal Ministry of Defense with pure CIAM characteristics (Ibid) was built on the specific urban plot where Ministry of Defense was destroyed in 1941. Dobrovic has decomposed this house into two objects coupled by forces of graphic and visual resources which were brought together by emphasized horizontality and unambiguous morphology form of masses. The building based on the principle of duality merged in the unity of the relationship between, on the one hand, the negatives of open space and positive of the built structures, on the other, clearly recognizes the five principles of CIAM: single pole, emphasized horizontality, roof terrace or garden, open plan and free façades.

Morphology of the building withdrawn in the shape of cascade is symmetrically introverted of its own axis, i.e. Nemanja Street and emphasizes the importance of negative space that remains within the moving room of the building structure. Designing principles of the moving space, Dobrovic (1960) argues with specific architecture of the space and Bergson's dynamic patterns[4]. The contrast between horizontal main volume flow and thick vertical tower makes the topic of dialectical opposition within the unique dynamics deeper. Defining its building, Dobrovic particularly explores the visual and spatial relationships between two volumes, which communicate through the negative space, i.e. the gaps between them. He presents three variants of normal and reverse cascades in symmetric and asymmetric schemes. The concept of design contrast is the subject which Dobrovic analyzes taking into account all the opinion positions of the Generalstab building architecture, from the main morphological setting to selecting materialization. In the Creative evolution, Bergson (1944) considers the world as a constant process, a constant state of becoming, change and development as well as an evolutionary process. With the current position of exploring nature and fate of the Generalstab building, that constant change is confirmed, as well as the nature and reinterpretations earlier mentioned testimony in time.

From the previous statements we may conclude that different interpretations of the architecture's will are possible in order to justify the building concept, from national and ideological stylization of Sutjeska River Canyon, to Bergson's evolution followed by capacity of positive and negative dynamic space. This dialectic is significant in the interpretation of architecture in traditional rhetoric where the architecture is considered as the relation between form and function. In many aspects of the building observation impression of dualism has been expressed, similar to Jencks's (1977) dual coding or post-modern concepts of ambiguity.
Kovacevic (2001) in his book „ Architecture of the Generalstab Building" has mentioned one event regarding building view in the French magazine *L'Architecture d'Aujourd'hui* in 1964. It refers on the occasion when editors were worried about permuting the last two numbers of the building year by accident, instead of 1936 was written 1963, when actually the building really was constructed. This indicates how one world's leading architectural journal considered Generalstab building as reminiscence of the 30s early modernist conception.
Being aware of everything that has mentioned above, we may claim that Dobrovic's building has been successfully surviving by referring to many positions, foundations and meanings. Having in mind the fact that architectural documents require more than the current popular interpretation, the most significant category are future cultural and civilization circumstances where the old are transformed into new ones by the flow and evolution. Kulic in his study assumes that NATO in its intervention against Serbia in 1999 symbolically bombed the Generalstab building notwithstanding that its military function during the emergency situation was relocated. Hereby power of ideological representation has been destroyed rather than the building and its function. The building was given new symbolism by bombing, as well as the new meaning and extended role of the time witness. It seems that particularly destruction caused the desolation and emptiness associated by Dobrovic's concept of negative space gaps.
In 2005 this building was registered as cultural heritage by Cultural Heritage Preservation Institute of Belgrade4. Today, the ruins of the building standstill, and represent unique tourist attraction in Belgrade, as well as focus of polemic debate among academics, politicians and citizens.
The aim of this paper is not to foreclose discussion surrounding the case of Generalstab building but to open up a series of dialogs in order to explore the issue of maintaining and managing memory in the city. This paper asserts the question of how to approach this complex issue of layers of meanings acquired through history. In order to stress that issue the paper introduces the concept of identity of place.

Identity

This paper represents an attempt to grasp the complexity of different values and meanings of Generalstab building acquired through its history by introducing the concept of identity of place. This concept enables analysis of Generastab building through its tangible and intangible properties. The concept is deriving from the place theory and assemblage theory. The complex of Federal Secretariat of National Defense is observed as place, rather than just a building. That implies analysis of its meanings as well as its physical characteristics in relation to time. The paper starts with preposition that place acquires different scales of build environment: it can be a single room, building, neighborhood, city, country, and so forth, which allows us to observe this complex of buildings as a place. The fact that Generalstab has gained a strong meaning contributes to our approach within the concept of identity.
Contemporary discourse on place, does not offer a single clear definition of its identity. Having that in mind, this paper uses two complementary approaches to the identity of place and stress the situation of Generalstab building from those aspects. It merges two concepts that derive from Heidegger's philosophy of being and Deleuze and Guattari's notions of becoming. The concept deriving from Heidegger's philosophy is used as basis for stressing both tangible and intangible elements of identity of place and concept of assemblage because of its definition of a place as complex system and its relations with change.
Following Heidegger's philosophy, the identity defines what the thing is. In place theory it refers to uniqueness and difference of certain locality. It comprises all the characteristics of a place, both tangible and intangible, which distinguish authenticity of certain locality. Identity of place is based on its essence, defining invariant characteristics.
In this paper we are referring to definitions of identity of place, deriving from Norberg-Schultz (1984), Relph (1986) and Cresswell (2004) which represent link with Heidegger's philosophy. In order to describe identity of place Schultz adopts the concept of genius, which he develops into the concept of *genius loci*. This concept is originating from Roman belief that all beings (even the gods) have their genius, their guardian spirit, which determines their character, their identity. Schultz explains that *this spirit gives life to people and places, accompanies them from birth to death, and determines their character or essence* (1984: 18). In that sense, the identity is described as transcendental element of the place, which can linger despite its physical changes, it is accompanying the place from its 'birth' to its 'death'.

In order to understand the processes of creation of identity of particular place, it is necessary to understand its elements. Relph argues *how static physical setting, the activities and the meanings- constitute three basic elements of the identity of places* (1986: 47). In similar fashion, Cresswell defines three basic elements of the place: *location, locale and sense of place* (2004: 7). Location is defining the relation of place to other places, locale is determining its physical characteristics, and sense of place defines the aspects of emotional attachments that people have to places. Those categories are determining two main aspects of place: on the one hand, tangible, physical setting (what Schultz defines as 'space' and Cresswell 'locale') and on the other, intangible that appears in relations of place and its users (defined as 'character', 'atmosphere', 'sense', 'meaning' and so forth). These two categories are in reality inseparable, and from their dialectical relations identity of place appears. Therefore, the identity of place emerges not only through its physical setting, but through emotional element that appears in relation of people and built landscape, as well. This emotional element is based not only upon judgment of the physical reality, but upon people's past, events and knowledge, as well. One can argue that assemblage theory represents a complement theory which allows descriptions of these relations.

Assemblage

Assemblage theory derives from Deleuze's philosophy which is largely conceptualized by Delanda into a theory. Following that philosophy, Delanda (2002) introduces the concept of *multiplicity*, which in flat ontology replaces the concept of essence, through which identity is defined. The multiplicity defines identity of any entity through dynamic morphogenetic process which creates that specific entity (Ibid: 9-10). Opposed to essences, which are eternal, multiplicities are defined as becomings, progressively changing through time. Multiplicities are defined as *structure of spaces of possibilities, spaces which, in turn, explain regularities exhibited by morphogenetic processes* (Ibid: 10). Therefore, multiplicities are not given all at once, rather they are possibilities, through which every entity is product of its own history. They reveal themselves through time and through concrete historical development of entity. Therefore the identity is described as historical evolutionary process, which comprises different temporalities and not only single detached moment. This ontology represents an attempt to describe identity as dynamic structure, rather than a static image.

Dovey's work (2010) is among recent attempts to define place in less essentialist and ontological way, by introducing assemblage theory as toolbox to explain place. Following Delanda, he replaces Heideggerian ontology of *being-in-the-world* with Deleuzian notion of becoming-in-the-world (Ibid: 6). By doing so, he depicts place as territorialized assemblage, as dynamic rhizomatic structure of people and environment. *Assemblage is a state of affairs rather than a thing or collection of parts. It is constructed from different elements but still can exist without one of them*. He uses the example of street to explain it: *a street is not a thing nor it is just a collection of discrete things. The buildings, trees, cars, sidewalks, goods, people, signs, etc. all come together to become the street, but it is the connections between them that makes it an assemblage or a place* (ibid: 16). Therefore, to observe place as assemblage is to emphasize the relations between elements that constitute it, rather than elements themselves. As Delanda explains, assemblages are wholes whose properties emerge from the interaction between parts (2006: 5).

Definition of place as assemblage represents an attempt to avoid reduction of place to subjective experience, in which sense of place emerges. As Dovey explains, the senses or meanings of the place are neither found within the material urban form nor they are simply added to it, rather they are integral to the assemblage (Ibid: 17).Therefore, the identity of place is conceived as part of an assemblage, not an element which emerges from it as transcendental category. The meanings and senses of place are in interaction with elements that compose that place, as part of an assemblage. That specific interaction is crucial in order to conceive identity of place.

An approach

From these two standpoints to the identity of place we derive at our approach to Generalstab building. The basis of approach consists of elements that constitute identity of place, belonging both to actual reality of physical setting and to experiential elements, which comprise meanings and emotional components. More specifically, the building should be observed through its physical characteristics and architectural values but in the same time through meanings which are created during its life and historical events. Those meanings are related to experiential sphere of people but in the same time they are based upon the physical elements of the place. Therefore the elements that are influencing its identity belong not only to the tangible sphere of the building but also to the intangible elements which are linked to it.

The second characteristic of this approach is the emphasis on the relations between the elements of place. Assemblage theory offers the fact that relations between elements are crucial in the definition of place and identity as assemblage. Therefore, the focus is on the relations between tangible and intangible components of the identity of place. Furthermore, this relations and assemblage theory offer the dynamic definition of identity which is always in process of becoming. This aspect allows us to approach identity as process and in the same time as product of unique historical events, in which a place becomes palimpsest, but whose layers interact between them and not only overlap. Therefore, the identity is not only an assemblage of tangible and intangible elements of place, but also between different temporalities: past, present and future. All those elements, both tangible and intangible, past and present are interdependent and are involved in creation of the identity of place.

In order to conceive the complex meanings of the Generalstab building this paper offers an approach through identity of place as assemblage of physical setting, activities and meanings. Furthermore, concept of identity is defined as tool for understanding the complexity of meanings that one building can gain. That complexity consists of physical elements and meanings which are deriving from the present and those deriving from the past. In that sense, this approach escapes reduction of the restoration and revitalization concepts only to the physical sphere of the building but it aims to understand the place in more complex terms. Therefore, instead of revitalization or restoration of the Generalstab building we approach to the restoration-revitalization of the identity of Generalstab building.

Identity of Generalstab building

The complexity of Generalstab building situation demands a complex approach. The specific characteristic of this building as an architectural value and its physical expression is not the only element that needs to be considered. The concept of identity of place offers an approach which considers the meanings related to this building from the past to the present. In the same time it explores the way those meanings are interacting between themselves and changing.
The fact that ruins of this place stand still exposes the complexity of this urban situation. It also exposes the problems related to the concepts of restoration and revitalization, which are usually orientated towards one dominant element of the place. Those approaches evaluate the place from only one aspect, usually related to economy. This paper offers the possibility for restoration and revitalization to observe one dominant element of the place as its identity. Therefore, the complexity of meanings and architectural expressions are conceived as inseparable elements in constant interaction.
Generalstab building represents a specific architectural herita

ge. It represents beginning of the modern movement in Serbia. The uniqueness of this complex lies in its appearance between two different styles, with tension between tradition and modernity. Nevertheless, the symbolic values which are gained in recent history of this building have strong impact on its identity as well. The tension between those is the most important part of the identity of Generalstab building. That tension is revealed through identity as an assemblage, as whole which emerges from the interaction between its elements.

Conclusion

Revitalization and renovation focuses on separable aspects of place such as physical setting and meanings. In this paper the alternative approach is applied at the analysis of the complex situation of Generalstab building. This approach conceives Generalstab's situation through its identity, therefore it focuses on interactions between elements rather than elements themselves. Those elements are related to tangible and intangible parts of a place, as well as their different temporalities.
The 'timeless' solutions offered by restoration-revitalization through which building becomes invariant and not resilient to change, do not respond to the city's memory. As Lynch explains: *Memory cannot retain everything; if it could, we would be overwhelmed with data. Memory is the result of the process of selection and of organizing what is selected so that it is within reach in expectable situations…*(1972: 36). In this extreme example of Generalstab building the impossibility to deal with complex issues of change and memory becomes palpable. Identity offers more dynamic way to conceive revitalization of this place. The preservation of identity rather than preservation of the building allows us to grasp this complex urban situation in more dynamic way and create an open system which can absorb change and adapt through time to new complex meanings and values. Therefore, in the same way in which Generalstab building was conceived by Nikola Dobrovic- ambiguous structure which merges different styles, architectural expressions and meanings-it continues its identity of intensities build upon the tensions between different elements of assemblage.

Notes

1.The complex of the Federal Secretariat for the National Defense, Belgrade, 1963.

2.Nikola Dobrović (Pečuj, 1897. - Belgrade, 1967.)

3.The fights in the canyon of river Sutjeska, May 15-Jun 15 1943, at the contemporary territory of Bosnia and Herzegovina

4. http://www.belgradeheritage.com/eng (the official web presentation of Cultural Heritage Preservation Institute of Belgrade)

Bibliography

Bergson H., *Creative Evolution*, Random Hause, New York, 1944. (original title L'Evolution créatrice, first published 1907.)

Cresswell T., *Place: a short introduction*, Blackwell Publishing, Malden, 2004.

DeLanda M., *Intensive Science and Virtual Philosophy*, Continuum, London and New York, 2002.

DeLanda M., *A New Philosophy of Society- Assemblage Theory and Social Complexity*, Continuum London- New York, 2006.

Dobrović N., *Pokrenutost prostora-Bergsonove dinamičke šeme – nova likovna sredina* [*Dynamic of space-Bergson's dynamic schemes*], in « Čovek i prostor », n 10, 1960.

Dovey K., *Becoming Places, Urbanism/Architecture/Identity/Power*, Routledge, London and New York, 2010.

Jencks C., *The Language of Post-Modern Architecture*, Academy, London, 1977.

Kovaćević B., *Arhitektura zgrade Generalštaba: monografska studija dela Nikole Dobrovića [Architecture of the Generalstab building: monographic study of Nikola Dobrovic's opus]* Novinsko-informativni centar "Vojska", Beograd, 2001.

Kulić V., *Architecture and the politics of reading: the Case of the Generalštab in Belgrade*, Fondazione Bruno Zevi. Trans. Borka Đurić.

Lynch K., *What time is this place?*, The MIT Press Cambridge, Massachusetts and London, 1972.

Norberg-Schulz C., *Genius loci towards a phenomenology of architecture*, Rizzoli International Publications, New York, 1980.

Relph E., *Place and placelessness*, Pion Limited, London, 1986.

Vukotić-Lazar M., *Beogradsko razdoblje arhitekte Nikole Dobrovića,[Belgrade's period of architect Nikola Dobrovic]*, Plato, Beograd, 2002.

Roberto Recalcati
Politecnico di Milano, Italy

The contemporary city in a deceiving search of identity

Everywhere I go, I take a little piece of you
I collect, I reject, photographs I took of you
The towns that I passed through, I've got to have a memory
Or I have never been there.
I have never had you, had you, had you...
I can't remember, give me a reminder
I collect, I reject memorabilia… memorabilia
(Soft cell, Memorabilia, 1981)

The theme of the city is interlacing and becoming a single thing with the problems concerning identity, in a time when all the places of the world are tending to be-come more and more similar and, for the law of retaliation, to turn "monuments" in to unchangeable and immaterial icons, ready to be used as a marketing instrument[1]: every aspect at the least disturbing is properly eliminated as ugly corrup-tions in advantage of an immaculate condition pre-original sin, where all is beautiful and clean and "authentic". In the meantime in the hinterland are built new neigh-bourhoods with vernacular and evocative names like Borgo Visconteo or *Le Corti Lombarde*: perfect sets, with their display of references and quotations to reassur-ing typologies, for a publicity campaign about the Happy Family.
Historic memory is therefore reduced to a virtual substitute, where the destruction of testimonies of our past comes along with pathetic (and pathologic) reproductions and photographic exhibitions, as tangible (but virtual) evidence of our supposed identity[2].

The pressing question of identity is closely connected to reflections concerning memory, because just by remembering we can define ourselves. John Locke, in the seventeenth century, already defined personal identity as conscience, as the ability of recognize oneself in changing, to link again moments very far in time; as the capacity then of a continuous autobiographic memorization. But we are aware that memories are built and destroyed continuously: if those memories are given us by someone else, by an oligarchy of intellectuals and politicians (or simply by TV), this basic personal activity is usurped (and the meaning of doing it can be several).

About that, fundamental are the clear reflections on the relation between reality and virtuality of Tomas Maldonado who - even if sceptical regarding the hypothesis of a world which is disappearing, becoming more and more virtual day after day - underlines the influence that developments of technologies in the field of virtuality can have – and have indeed – on the perception of reality. It's surely not immune by that potential virtualization the theme of identity, so much that Francesco Re-motti comes to define the word itself «poisoned» (*Remotti*, 2010), because it is a promise of something that doesn't exist and it deceives us on what we are not, let-ting pass for real what can only be a fiction or an aspiration. Because in the end what we call identity is just a myth, manipulable and exploitable as much as one likes, exactly for its volatile and indefinable connotation.

It is undeniable that lifestyle is becoming more and more similar in the cities all around the world, conditioning inevitably the urban morphology, so one's not sur-prised if more than thirty years ago Andy Warhol had asserted that the most beau-tiful thing in Florence was McDonald's, identical in New York, in Milan or in Paris. But, is this levelling that can set us free from the nagging of a history which is be-coming more and more prêt-a-porter? It is so that the ideal contemporary city fol-lows the transient of futurism recalled, but without the subversive charge of Sant'Elia[3] and Marinetti: «My ideal city – writes Warhol anticipating today's situa-tion - would be completely new. *No antiques*. All the buildings would be new. (...) Buildings should be built to last for a short time» (Warhol, 2007).

To this uniformity is opposing the fact that walking through any city one crosses continents in a few streets, because borders are becoming "fluid" and the Arabic world is interlacing with the Chinese as well as the Turkish döner kebap alternate with sushi bars and Neapolitan's pizzerie. But, as is evident, not everything is al-ways so "fluid". The philosopher Giulio Giorello – in a book written together with the cardinal Carlo Maria Martini - denounces in fact the tendency to a ghettoization of the different communities which inside the city are isolating themselves in water-tight compartments, impermeable and not communicating. So he asks himself if there was a possible way to avoid this new kind of apartheid, where every culture is separated. It isn't easy to give an answer to this question and to this dramatic situation. It is certain that, at any rate, the population – native and not – feels threatened its presumed identity by cultural heterogeneity more than by being as-similated to global models as McDonald's; all that comes from outside is perceived as a threat of alteration, therefore a threat to the integrity and purity of identity. Carlo Maria Martini answers to Giorello with an optimism not at all consolatory[4], but full of doubts and human compassion because «diversity is a richness not always understood for what it is» (*Martini et Giorello*, 2010). In this interesting confronta-tion between two so different points of view, Giorello asks to Martini if there wasn't the risk that the recall to the Christian roots could exasperate the reaction of who closes himself into his own ghetto; question to which the cardinal answers by not believing that the recall to the roots could have a negative effect, because to have an authentic dialogue one needs to know who he is, where he comes from and where he is going to. And his interlocutor should be aware of that as much as him. «What meaning would have (…) a dialogue between two people without memory?» (*Martini et Giorello*, 2010). The solution is perhaps in continuing to proffer ques-tions about that incessant redefinition of self through a deep and sincere confronta-tion with the other, with one's past, with one's changing memories and with one's future.

Pier Paolo Pasolini, back in the Seventies, launched the alarm of an impending and devastating danger: the progressive destruction of all that peripheral cultures succumbing to a despotic power, which imposes a univocal and stereotyped model through mass-media. «No fascist centralism – he wrote - has been able to do what consumerist civilization centralism did» (*Pasolini*, 2008). In fact his battle, in his writings and videos, was not limited to the denunciation of the destruction of monu-ments and ancient buildings made in the name of a deceiving idea of modernity and emancipation from dictatorial regimes all over the world, on the contrary! «one can then assert that the "tolerance" of hedonistic ideology wanted by the new power, is one of the worst repressions of human history» (*Pasolini*, 2008), because its subtlety insinuates itself much more slyly in the human mind, muddling up eve-rything so much to make it totally insensitive to that enormous loss, because this "tolerance", in the end, is just a mask.

One can't be surprised that nowadays in Italy it is possible to "retouch" a copy of a Tepolo's painting (perhaps someone adds a "bra"!!!) because it must go on TV. That actually happened. *La Verità svelata dal Tempo,* or better *Tempo scopre la Verità*, was chosen by the ex-Premier as new background for his press confer-ences, but the people handling his image thought that that little and pure breast, omnipresent on every TG news above Berlusconi's head, could have hurt the feel-ings of the television audience, so they covered it. All that was done on a copy and the original was not touched by anyone, but this event is however indicative of a problematic situation, to say the least, as well as ambiguous (and a little bit ridicu-lous).

When *Benetton*, during the completion of a new shop in Monza, demolished part of an ancient building - the House of the red Moon - to prevent it falling by itself![5] they apologized and promised the rebuilding at their own expense. And the Benetton managing director - in a letter[6] to the mayor and citizens - innocently insures that the front hasn't been demolished, but disassembled and everything will be re-built exactly as it was. Clearly there is a serious misunderstanding about the mean-ing of authenticity and unrepeatability.

Therefore one cannot be amazed that who sponsors the restoration of the theatre *La Fenice* in Venice is the owner and founder of Las Vegas' *Venetian Hotel*. And no one can be amazed that before the devastating G8 of Geneva the ex Prime Minister Berlusconi wanted to cover with a scenery[7] a little building of the Sixties, guilty of not being picturesque enough for a well-known aesthete as George W. Bush.
If the deep sense of the metropolis has always been (as for memory and for iden-tity) in its continuous changing, transformation, destruction, replacement, it's also true that in the last two centuries, and even more in the last few years, all that is showing a face particularly repressive (as well as speculative).
Demolitions like that planned by Haussmann in Paris or like the "redevelopment" of Naples at the end of the nineteenth century would seem impossible nowadays but, under some points of view, also the project *City life* here in Milan caused the al-most complete demolition of the old *Fiera Campionaria* without any problem con-cerning its possible preservation or, at least, a confrontation with the pre-existing buildings and surroundings. And the coming (very positive) of the Politecnico at Bovisa has taken with it the loss, year after year, not only of important industrial buildings, but of all the old taverns which characterized the neighbourhood, re-placed by new bars, restaurants and services for the students: we can just glimpse, on a few faded signboards, fragments of a gloriously anti-heroic and anti-rhetorical past. Everything changes and in the friction of time we continuously lose endless details which will never come back.

Among the writers and artists that during the last few years have sung about the contemporary city (as in the past Baudelaire or Testori), a peculiar role is up to *Marc Almond*[8] who, in his poems and songs, has always preferred the more sordid and marginal aspects of contemporary urban life and has always shown interest for what in a city risks to disappear carried away by "progress" and fashion. About Barcelona, he writes of the demolitions of large areas of that Barriochino, so much loved by Jean Genet, whose inhabitants «have been defeated by the tide of medi-ocrity disguised as progress which threatens to engulf us all. Traditionalism – he writes – is swept away, as we are told we all need the same things in this new glo-bal village» (*Almond*, 1999). And further down he remembers that for the Olympic Games of 1992 bar Kike «and others like it were closed by the police in case the new wave of tourists took offence at the colourful clientele, who might send out the wrong image of the new Barcelona (…). The poor were exiled to one of those hinterlands, where such undesirables are sent in times of "clean-up"» (Almond, 1999). That denunciation is surprisingly close to what Friedrich Engels and later on Walter Benjamin wrote about Haussmann's demolitions[9] for the political and oppressive purpose they had.

Some years ago Almond published a really interesting book entitled *In search of the pleasure palace* which is a deeply subjective itinerary to his most loved city, in search, as the title suggests, of an ideal place of pleasure. There's no need to say that this search turns out to be in vain, since the global thought destroys all those details and peculiarities that create the charm and history of places: they have mostly disappeared or are disappearing worlds. The post Rudolph Giuliani's New York, victim of "disneyfication" – where the «porno cinemas have gone, turned into cheap food restaurants» (*Almond*, 2004) and where «the city has even cleaned up Times Square for poor defenceless Disney» (*Almond*, 2004)[10]. – of which Almond speaks is linked to what Marc Augé writes about the central areas of Manhattan, where the *Disney Corporation's* architects have planned – after the expulsion of the poor - the building of a Grand Hotel crossed by a "galactic ray" and a depart-ment store covered by gigantic TV screens: « that's the city of Superman and com-ics – writes Augé -which real life is preparing to imitate today» (*Augé*, 2002). From a state where fiction imitates reality we're going to a state where (paraphrasing Oscar Wilde) reality tries to imitate fiction[11]. Pasolini's prophecy has been therefore entirely realized in an inversion of perspective where what is real and what is false can impudently change their role in a peaceful (because unaware) acceptance.

It is emblematic then, how David Foster Wallace describes Las Vegas: «A city that pretends to be nothing but what it is, an enormous machine of Exchange – of spec-tacle for money, of sensation for money, of money for money» (*Foster Wallace*, 2005). And he gives us the most important truth about the contemporary global city reflecting on a great and famous hotel: «In Caesars Palace is America conceived as a new kind of Rome: conqueror of its own people. An empire of Self» (*Foster Wallace*, 2005).
I think that the real problem is exactly this gasping search of a prearranged identity that, also when it could appear as just a joke, feeds itself with cruelty and intoler-ance. One searches into a far and mythicized past for ones right and authority. As Claudio Magris, who in several books faces the theme of border identities, writes about the Islands of Dalmatia, the «vain search for ethnic purity reaches down to the most ancient roots, (...) in a fever to establish the racial origin of the foot that first stepped on the white beach (...), as though this were proof of greater authen-ticity» (*Magris*, 2000). But in a World continuously changing, where frontiers change and everyone and all things are mingling more and more, one should op-pose to a concept of identity unchangeable and linked to the former a dynamic and multiple concept of identity, which feeds itself with the treasures that are stratifying day after day on the ground of nations and cities, because, quoting Magris again, the «journey down never reaches a point of arrival or departure, the Origin is never identified» *(Magris*, 2000)[12] .

If the city is a place of encounters and collisions of thoughts and cultures, which rebuilds continuously its identity through the new, then we have to look at it for what it is in its contingent stratified materiality[13], just because it is a cradle for a possible future, as well as custody of our past and tradition. We should be aware that the concept of preservation and transformation, as Marco Dezzi Bardeschi taught me, are linked together. There's no preservation without a project of some-thing new. There can't be a "recipe" for the right thing to do, but I think that every project, every new building and even every little addiction should come from a deep and sincere dialogue with pre-existing surroundings, because this is the only way to put new life in ancient contexts without betraying them. We must learn to preserve the metamorphosis instead of looking for a virginity that might never have been.

I'd like to conclude now by putting again all at stake and quoting what Foster Wal-lace writes about dictionarists' prescriptions on the use of language: «Who's to say which changes are natural and good and which are corruptions?» (*Foster Wallace*, 2005)[14].

Bibliography

AA.VV., *Sant'Elia e l'ambiente futurista*, Mazzotta, Milano, 1989

AA.VV., *Storia dell'architettura - Antologia critica*, Etaslibri, Milano, 1989

AA.VV., *Le Paris d'Haussmann*, Picard, Paris, 1991.

AA.VV., *Antologia dell'architettura moderna. Testi, manifesti, utopie*, Zanichelli, Bologna, 1992

AA.VV., *Milano restaurata: il monumento e il suo doppio*, Alinea, Firenze, 1995.

AA.VV., *La sfida del Moderno*, Unicopli, Milano, 2003.

AA.VV., *La memoria perduta di Milano*, Skira, Milano, 2010.

AA.VV., *Il Re(stauro) è nudo*, Lampi di stampa, Milano, 2010.

Almond M., *Tainted life, Sidgwick & Jackson*, London, 1999.

Almond M., I*n search of the pleasure palace*, Sidgwick & Jackson, London, 2004.

Augé M., *Disneyland e altri non luoghi,* Bollati Boringhieri, Torino, 2002.

Augé M., *Che fine ha fatto il futuro?*, Elèuthera, Milano, 2009.

Baudelaire C., *Scritti sull'arte*, Einaudi, Torino, 1992.

Baudelaire C., Fusée, *Mon cœur mis à nu*, La Belgique déshabillée, Gallimard, Pa-ris, 1986.

Benjamin W., *L'opera d'arte nell'epoca della sua riproducibilità tecnica*, Einaudi, Torino, 1966

Benjamin W., A*ngelus Novus*, Einaudi, Torino, 1976.

Barthes R., *Miti d'oggi*, Einaudi, Torino,1974.

Roberto Recalcati
Politecnico di Milano, Italy

Bellini A., *Dal restauro alla conservazione: dall'estetca all'etica*, in «'ΑΝΑΓΚΗ», n. 19, 1997.

Belpoliti M., *Il corpo del capo*, Guanda, Parma, 2009.

Biondillo G., *Pasqualino settebellezze e gli intellettuali italiani*, in «'ΑΝΑΓΚΗ», n. 13, 1996.

Cacciari M., *Metropolis, saggi sulla grande città*, Officina, Roma, 1973.

Cacciari M., *Le metamorfosi della autenticità*, in «'ΑΝΑΓΚΗ», n. 2, 1993.

Cartosio F., *Tesori perduti. In nome della legge*, «Medioevo», n. 6, 2002.

Cruciani Fabozzi G., "Le delizie dell'imitazione": restauro urbano e utopie regressi-ve, in «'ΑΝΑΓΚΗ», n. 11, 1995.

De Quincey T., *Confessioni di un oppiomane inglese*, Garzanti, Milano, 1979.

Dezzi Bardeschi M., *Autenticità e limiti dell'interpretazione*, in «'ΑΝΑΓΚΗ», n. 2, 1993.

Dezzi Bardeschi M., *Restauro: punto e da capo. Frammenti per una (impossibile) teoria*, Franco Angeli, Milano, 1996.

Dezzi Bardeschi M., *Restauro: due punti e da capo*, Franco Angeli, Milano, 2004.

Eco U., *Opera aperta*, Bompiani, Milano, 1962.

Eco U., *I limiti dell'interpretazione*, Bompiani, Milano, 1990.

Foster Wallace D., *Consider the Lobster. And Other Essays*, Abacus, London, 2005.

Gadamer H.G., *Verità e metodo*, Bompiani, Milano, 1983.

Gioeni L., *Genealogia e progetto*, Franco Angeli, Milano, 2006.

Gioeni L., *Considerazioni inattuali*, Franco Angeli, Milano, 2008.

Giorello G., Martini C.M., *Ricerca e Carità*, Editrice San Raffaele, Milano, 2010.

La Regina F., *Come un ferro rovente*, Clean, Napoli, 1995.

Locke J., *Saggio sull'intelligenza umana*, Laterza, Bari, 1951.

Macchia G., *Il mito di Parigi*, Einaudi, Torino, Milano, 1965.

Magris C., *Microcosms*, The Harvill Press, London, 2000.

Magris C., *L'infinito viaggiare*, Mondadori, Milano, 2005.

Magris C., *La storia non è finita*, Garzanti, Milano, 2006.

Maldonado T., *Il futuro della modernità*, Feltrinelli, Milano, 1990.

Maldonado T., *Memoria e conoscenza*, Feltrinelli, Milano, 2005.

Maldonado T., *Reale e virtuale*, Feltrinelli, Milano, 2005.

Pasolini P.P., *Scritti corsari*, Garzanti, Milano, 2008.

Perec G., Life a user's manual, Vintage, London, 2008.

Recalcati R., *Pubblicità e restauro: vietato invecchiare!* , in «'ΑΝΑΓΚΗ», n. 37, 2003.

Reed J., *Piccadilly Bongo*, Enitharmon, London, 2010.

Remotti F., L'ossessione identitaria, Laterza, Bari, 2010.

Sartoris A., *Sant'Elia e l'architettura futurista*, Sapiens, Milano, 1993.

Testori G., *Opere 1943–1961*, Bompiani, Milano, 1996.

Vattimo G., *La fine della modernità*, Garzanti, Milano, 1985.

Warhol A., *The Philosophy of Andy Warhol. (From A to B and back again)*, Penguin, London, 2007.

Wilde O., *The Decay of Lying and Other Essays*, Penguin, London, 2010.

Notes

[1] And the cities which are supposed not to have monuments are building them just to be icons.
[2] Perhaps somebody wants to remember us for who we are, or better for who we should be.
[3] Everybody knows that he wrote that every generation should build his own city.
[4] «new models of pacific cohabitation – writes Martini - shall be reached; or better, are already being enacted in every parts of the world»(*Martini et Giorello*, 2010) as in Jerusalem where he chose to live for several years.
[5] Filippo Cartosio says that the demolition was explained (after that the demolition was done) as an urgent intervention of dismantling to preserve the whole building from falling. (*Cartosio*, 2002).
[6] The letter was reported by Corcella in his article: «Benetton s'impegna: "Ricostruiremo la casa medievale"», in *Corriere della Sera*, 31 agosto 2000.
[7] The scenery represented typical traditional houses.
[8] Marc Almond is a versatile artist who became famous in the early Eighties with the techno-pop group *Soft cell.*
[9] George Perec in *Life a user's manual* closes prophetically that circle foreseeing that the «the same fever which around eighte-en fifty brought these buildings out of the ground (…) will hen-ceforth strive for their destruction» (*Perec*, 2008). The scen-ery that he describes is apocalyptic for the reduction to plain dead material of a place crowded with lives, loves, pains and micro histories. «The demolition men – he writes - will come and their heavy hammers will smash the stucco and the tiles, will punch through the partitions, twist the ironwork, displace the beams and raf-ters, rip out the breeze blocks and the stone: grotesque images of a building torn down reduced to piles of raw materials which scrapmerchants in thick gloves will come to quarrel over». (*Perec*, 2008).
[10] Regarding the "clean up" of Time Square, Almond remem-bers that also «the last remaining strip bars had to remove the word "Topless" from the signs and board-ings. Bars that specia-lized in bare-breasted go-go dancers such as Billy's Topless got round this for a while by shifting the "s" across until it read "Billy Stopless"» (*Almond*, 2004).
[11] In fact just «up Broadway ńwrites again Almond ńis the new Disneyland: reno-vated ex-porno and B-movies theatres, shod-dily resurrected into imitations of cinemas, in much the same style as imitation fifties American diners» (*Almond*, 2004).
[12] «Scratch an Italianized surname – writes again Magris -and out comes the Slav layer (…), but if one continues then some-times an even more ancient layer ap-pears, a name from the other side of Adriatic or elsewhere» (*Magris*, 2000).
[13] To the more and more frequent Arcadian-bucolic temptations for a renovated re-lationship with a sweetened idea of nature, one should set against a truly and deep attention to what sur-rounds us for better or for worse.
[14] All the quotations by Augé, Giorello, Martini and Pasolini have been translated by me because i didn't find an edited translation.

Legenda

recalcati_roberto.jpg: The photograph shows the cabin of the parking attendant of a large car park near an archaeological area in the centre of Milan. Year after year the walls of that ca-bin have been decorated with postcards, posters, fragments of newspapers and magazines which create a strange and deeply human type of pal-impsest.

Søren Vadstrup
Royal Danish Academy of Fine Art, Denmark

Working Techniques and Restoration Methods for Plaster Decorations on Facades - in new and old design

For several centuries architects and builders has used rich and imaginative decorations on the facades to make a attractive and expressive buildings. These high skilled craft elements are today an important part of the beauty and the architectural atmosphere of old historic cities, which you immediately experiences, when you walk or drive in the streets, squares and townscape.

In some periods, for instance during the modernism, rich building decorations were hated and disparaged by the architects, and some even still today, but façade decorations are not superfluous or bad taste. They are impressive, imaginative and above all they give character to the building and the street or square, where it is situated. They provide life and variation to the facade, because of the vivid sun light and shadow on the sculptured surfaces, they tell the spectator about the style and the age, of the building and they represent excellent craftsmanship in the advanced techniques, shapes and designs they expresses.

This, for many quite new discoveries, of this very widespread rich and valuable cultural heritage, opens two interesting aspects:
1) How can we today reproduce, repair and maintain these decorative elements, when many of the crafts techniques, and also some of the materials, are missing or forgotten.
2) How can we today make use of this knowledge, to design modern buildings in historic towns more adapted to the historic environment and impact?

This paper will present a research project in Denmark, where the original crafts techniques and the authentic materials and tools were rediscovered and reconstructed, among others inspired by a study visit to Italy (Firenze), in order to restore and recreate faced decorations on a number of old historic buildings.

Typical elements of plaster decorations on facades In the XIX and XX Century, it was very common to set up plaster decorations on building facades. The plaster decorations might look exactly like decorations in natural stones, but was much cheaper to produce. The primary purpose and effect of the plaster decorations is therefore to imitate and look like natural stone decorations. Drawing no. 1 shows some of these typical elements: Pediments, vases, balustrades, main cornices, friezes, casings, festoons, ashlar and stucco decorations.

Later on, from about 1870, the facades became more and more decorated and overelaborated, which lead to the original, innovative and vigorous Art Nouveau Style about 1900 - 1916. Also the successors of this style, Art Deco and Functionalism imply facades with more limited plaster decorations.
The plaster decorations very often have their ideal from antique Greek and Roman temples and architecture. Therefore they imply a number of typical mould elements from these models, elements which are also repeated in joinery, masonry, wood- and stone carving as well as interior stucco work.
The mould elements have both a simple and a more detailed shaping. The names for the elements on the antique Greek temples are often used for these common facade details.

Working techniques

In the authentic plaster works on facades it is possible to distinguish between 5 various working techniques, which are further described in the next chapters.

1. Ornamented/decorated flat plaster on facades
2. Sunken batten decorations in plaster on facades
3. Running mould decorations in plaster on facades
4. In-situ hand modelled decorations in plaster on facades
5. Cast decorations in plaster, gypsum or cement on facades

These working methods have their own special elements and characteristics, but in certain cases the various techniques may produce the same element, for instance a half column.

Materials

Decorated flat plaster is made of air lime mortar or natural hydraulic lime mortar. *Sunken batten decorations* are made of natural hydraulic lime mortar or Portland cement mortar.
Present repairs must use hydraulic lime mortar.
Running mould decorations are mainly made of air lime mortar or hydraulic lime mortar, more seldom Portland cement mortar.
In-situ modelled decorations are always made of air lime mortar or hydraulic lime mortar.
Cast decorations on facades are either made of gypsum or Portland cement mortar.
The gypsum decorations are mainly made as quite flat relief, or placed protected from water under large a main cornice. It is very important that the cast gypsum decorations on facades are surface treated and protected by a layer of linseed oil paint.
The plaster decorations on facades are furthermore very often combined with other materials, bronze, cupper, wrought or cast iron, tile, wood or natural stone.

Decorated flat plaster on facades

Flat plaster surface on facades is seldom just flat plaster. The deliberate choice of gravel and sand for the mortar influences on the colour and texture of the finished plaster. This “natural coloured” plaster can be brown, grey, brown-grey, brownish, yellowish, reddish - as the gravel material itself.
The next decorating step is to colour the mortar with pigments. This enables the plaster to be yellow, red, red-brown, green, black-grey and white.
The third step is to give the plaster a surface treatment of colours, made by paint or lime wash all over the surface. But this material can also manifest itself in artistic decorations in lime technique (al secco) or in linseed oil technique.

More sophisticated decorations can however be achieved by decorating the flat /plaster itself, by 5 various techniques:

1 Scratched stucco-decoration
2 Protruding pointings
3 Inlay/intarsia plaster decorations
4 Sgrafitto decorations
5 Al fresco decorations

Sunken batten decorations in plaster on facades Stucco, ashlar and imitated/artificial stone on facades can be made in several ways, but the sunken batten technique, which is described here, is definitely the masons work, while the technique of making ashlar with running moulds is mainly carried out by the stucco workers - sometimes by the masons.

Sunken batten decorations is made of specially formed battens, which make a reverse imprint in the wet mortar, and by this, when the battens are removed again, imitating pointings or forming edges of natural stone work.
The drawing shows the different varieties of sunken batten decorations. Most common are ashlar decorations, but also other possibilities are indicated. Ashlar can have various appearances, as shown on the drawing, both regarding the relief in the pointing grooves and the character and structure of the surface.

Making sunken batten decorations

The backing coat for the sunken batten plaster decoration has to be 2 layers of rough mortar, thrown on the well watered masonry, smoothened and after this hardened for 2-3 days or a whole week.
A lot of battens are planed to obtain the right shape for the reverse imprint of the pointing grooves.
After this the battens are soaked, totally sunken in water, for a couple of days. The shrinkage of the wooden battens after the hardening of the mortar and the drying of the wood makes it possible to remove the battens again without spoiling the edges of the pointings. In addition the battens must have a conical and chamfer shape.
When the backing is ready, the battens are placed and fixed to the facade, in the wished pattern. After a thorough watering of the backing coat, a layer of rough hydraulic lime mortar is thrown on the surface and smoothened, approximately 1 cm under the outer level of the battens.

After a weeks hardening the ground is thoroughly watered and a finishing layer of fine grained (0-4 mm sand) hydraulic lime mortar is thrown on. Now the surface is smoothened and glazed very carefully, to the same level as the outer level of the battens. While the mortar still is wet, and the battens still at their place, the desired surface structure is carried out.
After a weeks hardening the wooden skeleton is removed very carefully, in order not to destroy the edges of the pointing profiles. The screw holes, possible missing parts or air holes are repaired immediately, if necessary with a special shaped jointer.

Surfaces structures on ashlar

1 *Glazed or polished surfaces* are made by a smooth wooden float and a metal board.

2 *Splatter dashed surface*s are made of a relatively rough lime mortar, thrown on the surface through a rough sieve.

3 *Sparrow picked or combed/brushed surfaces* are made with special tools as shown on the drawing, while the surface mortar is still wet. The comb or besom is often drawn slantingly.

4 *Granite gravel surfaces* are made of selected granite gravel, either rough cut and sharp rubble or small round gravel, which is thrown at the wet mortar or pressed or pushed in place. To fix the gravel, it is furthermore pressed in the ground by a roll or a wooden beater.

5 *Rough carved surfaces* are made by leaving the surface 2-3 cm higher than normal. After one week of hardening the surface is carved with stone carving tools: Flat chisel, tooth chisel, point chisel, flat hoe and tooth hoe, for different surfaces.

Running mould decorations in plaster on facades

The main cornices, the architrave and horizontal friezes, the window- and door casings and possible half columns are typically made by running mould. But also ashlars can be constructed this way.

Tools and utensils

Running mould are made by a sheet zinc mould, mounted on a wooden sledge, which is able to “Running” or glide along the facade, via horizontal or vertical rails and guides, fixed to the facade.

Furthermore special trowels and boards are necessary.

Making Running mould main cornices and friezes At first it is necessary to make an exact drawing 1:1 of the profile or mould of the cornice or frieze. If an existing cornice is repaired or replaced, the old and original profile must be painstakingly measured and recorded - on a place, where the profile is best preserved and correct.
To verify the exact shape, an accurate templet is made in paperboard, and tested and corrected at the spot. Note that the main cornice is often made with a little oblique drip (undercarved) internally, to prevent water drops from “hanging”. This must be carefully copied.
The next step is to make an precise sheet zinc mould of the same shape as the cardboard templet. After this a 1 cm smaller sheet zinc mould is made for the first, muffle running mould. Both sheet zinc moulds are nailed to a piece of board or plywood, cut out 2-3 mm smaller than the sheet zinc mould, and provided with a chamfer towards the profile.
The wooden piece with the sheet zinc mould is now firmly mounted to a wooden sledge with a special lock wedge and two shore lists, fixed with screws.
Now two wooden rules are mounted at the masonry, following the future lines of the cornice, frieze or casing, at the facade, and adjusted in proportion to the right height and course of the running mould sledge. As the mortar layer must not be more than 5 - 6 cm thick, all larger running mould decorations must have adequate corbellings of bricks or stone in the masonry. Therefore it is necessary to test the running mould sledge on the spot, in order to ensure, that the applied mortar layer everywhere will be 3 - 5 cm thick.

After plentiful pre-watering of the backing, coarse hydraulic mortar is thrown on, and the small sized
reverse running mould drawn with the slanting edge pointing backwards. This is done several times, until the shape is complete, according to the small mould. If the surface is very smooth, it will be necessary to scratch small grooves in it.
After 2 - 3 days of hardening, preferably more, we are ready for the finishing coat. The mortar for this must be made with air lime, wet slaked for at least 3 years, mixed with very fine sand (0-4 mm), in proportion 1:3. Mixing time: 20 minutes.
The ground is pre-watered and the fine grained mortar thrown on and treated with the larger reverse running mould mounted at the sledge. When the shape is completed, a finish coat is applied, mixed in the proportion, lime sand 1:2, while at the same time, the running mould is drawn the opposite way - with the slanting edge pointing forward. This creates a particularly hard, smooth and weatherproof surface.

In-situ modelled decorations in plaster on facades

In-situ hand modelling of plaster decorations on facades is a very old crafts technique belonging to the stucco worker’s profession. Typical hand modelled elements can be consoles, festoons, medallions, animal heads, column capitals, etc.
First a full scale drawing of the decoration, either produced by the craftsman, the artist or the architect, is made on paper, which is impregnated with a coat of shell lacquer. This is however not always necessary, if the paper is sufficiently strong and stiff. Now the outline of the figure is riddled with an awl, making small holes through the paper, now called a ponse.
With a little slightly un-tight linen bag, filled with charcoal-dust, the black powder is sprinkled over the ponse and through the pricked holes in the paper. This, of cause, is done at the exact place for the decoration on the facade, and when the ponse is removed, the contours of the decoration is nicely transferred to the surface.

The outlines are drawn up and the application of mortar prepared by cutting grooves in the surface and the contour with a chisel. After the usual pre-watering of the ground, the mortar, preferably a medium fine hydraulic lime mortar (1:2:9), is thrown on. Now first the exact outline and next the details of the decoration are hand modelled with the use of stucco worker’s tools: various round, square and hollow spatulas.

Cast decorations in plaster, gypsum or cement on facades

Quite a lot of the decorations on plaster facades are cast in Ordinary Portland Cement mortar, gypsum or other specially mixed materials and thereafter mounted to the plaster surface.
Portland Cement is created among other things to suit this purpose, but it is hard to believe, that a relatively weak material as gypsum can last for long time on rain, frost and salt exposed exterior facades. But experience shows, that cast gypsum decorations have a surprisingly good durability and can under certain circumstances last for several hundred years.
The gypsum decorations are in spite of this mainly reserved to quite flat reliefs or friezes, or they are placed well sheltered from water under a large main cornice or roof eaves. It is furthermore very important that the cast gypsum decorations on facades are surface treated and protected by a layer of linseed oil paint. Possible bearing and mounting iron has to be rust protected carefully or made in stainless steel.
A very special material, used in Britain as early as the late 1700s and still used today is composition or comp, a very early “plastic” material, consisting of linseed oil, animal glue, natural resin and clean whiting as the filler. Heat and steam was used to speed up the curing.
It is quite often difficult to see, whether a facade decoration is hand made on the spot or cast and mounted. Only more close investigations will disclose or verify this. The treatment in case of damages and deteriorations are quite different.
The cast decorations were often cheaper than the hand made, as they can be mass-produced and still look relatively individual, because of the huge amounts of products and enormous sales potential.
Complete catalogues with drawings, sizes, variations and prices were sent to the crafts firms, to the architects and the building owners from the big factories in each country. Columns, half

columns, balconies, balustrades, consoles, casings, friezes, festoons, medallions, etc. etc.
There are three methods for casting in Ordinary Portland Cement:

1 Pressed semi-dry casting method in a rigid reverse piecemould
2 Wet casting method in a rigid reverse piecemould
3 Wet casting method in a flexible mould
The advantage of the semi-dry technique is, that it is by far the fastest, as a casting takes 20 to 30 minutes. A wet casting demands a day in the mould to harden.
When recasting old facade ornaments on historic houses today, primarily the flexible moulds are used, so only this method is described in the following.

Wet casting with gypsum or Portland Cement in flexible reverse moulds:

1 Production of a full scale model in a appropriate material: Gypsum, wood, cement.
2 Making of a reverse casting mould in cement, gypsum (being hard piece-moulds) or, to day, silicone rubber (flexible rubber mould). The mostly used type is “open” in the back, only with mould quarters on the five sides - including top and bottom.
3 The casting mass, Portland Cement, gypsum, more rarely hydraulic lime mortar, is poured into the casting mould. Irons or other systems for mounting are fastened in the wet and soft material
4 After the hardening the cast element is removed carefully from the casting mould and possible defects are repaired or retouched.
5 Finally the cast element is sold, transported to the building site and mounted at the facade.

Combined techniques

In the 200 years of the flourishing heydays of the decorative plasterwork architecture in Europe, the creativity was almost boundless, regarding experiments and improvements of materials and methods.
Especially in combining the previously mentioned 5 main crafts techniques for the plaster decorations.

Everything was tried and used:

1. *Running mould with cast details*
2. *Running mould with modelled details*
3. *Modelled decorations with cast details*
4. *Cast decorations with modelled decorations*
5. *Prefabricated Running mould or modelled decorations*

It is often very difficult to distinguish these combinations on the actual decorations or elements.

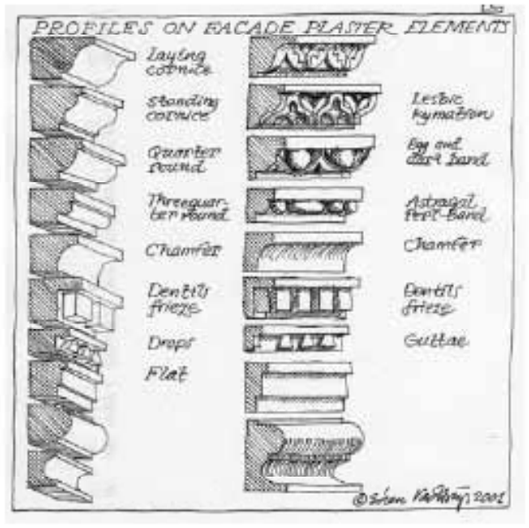
Probably only the executing craftsman will know

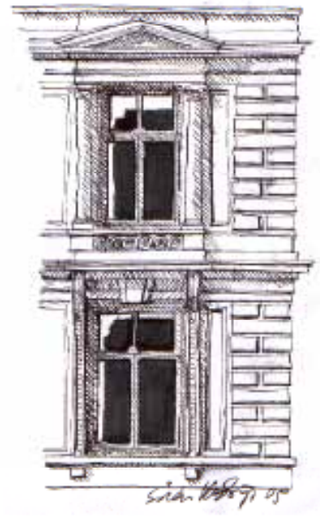
Søren Vadstrup: Royal Danish Academy of Fine Arts, School of Architecture, Institute of Cultural Heritage

Working Techniques and Restoration Methods for Plaster Decorations on Facades - in new and old design

Paper for the EAAE/ARCC Conference in Milano the 7-10th June 2012
Cities in Transformation Research & Design
Ideas, Methods, Techniques, Tools, Case Studies
Theme 3: Criticism, Conservation and Restoration

By Søren Vadstrup, Architect MAA, associate professor, Denmark





For several centuries architects and builders has used rich and imaginative decorations on the facades to make a attractive and expressive buildings. These high skilled craft elements are today an important part of the beauty and the architectural atmosphere of old historic cities, which you immediately experiences, when you walk or drive in the streets, squares and townscape.

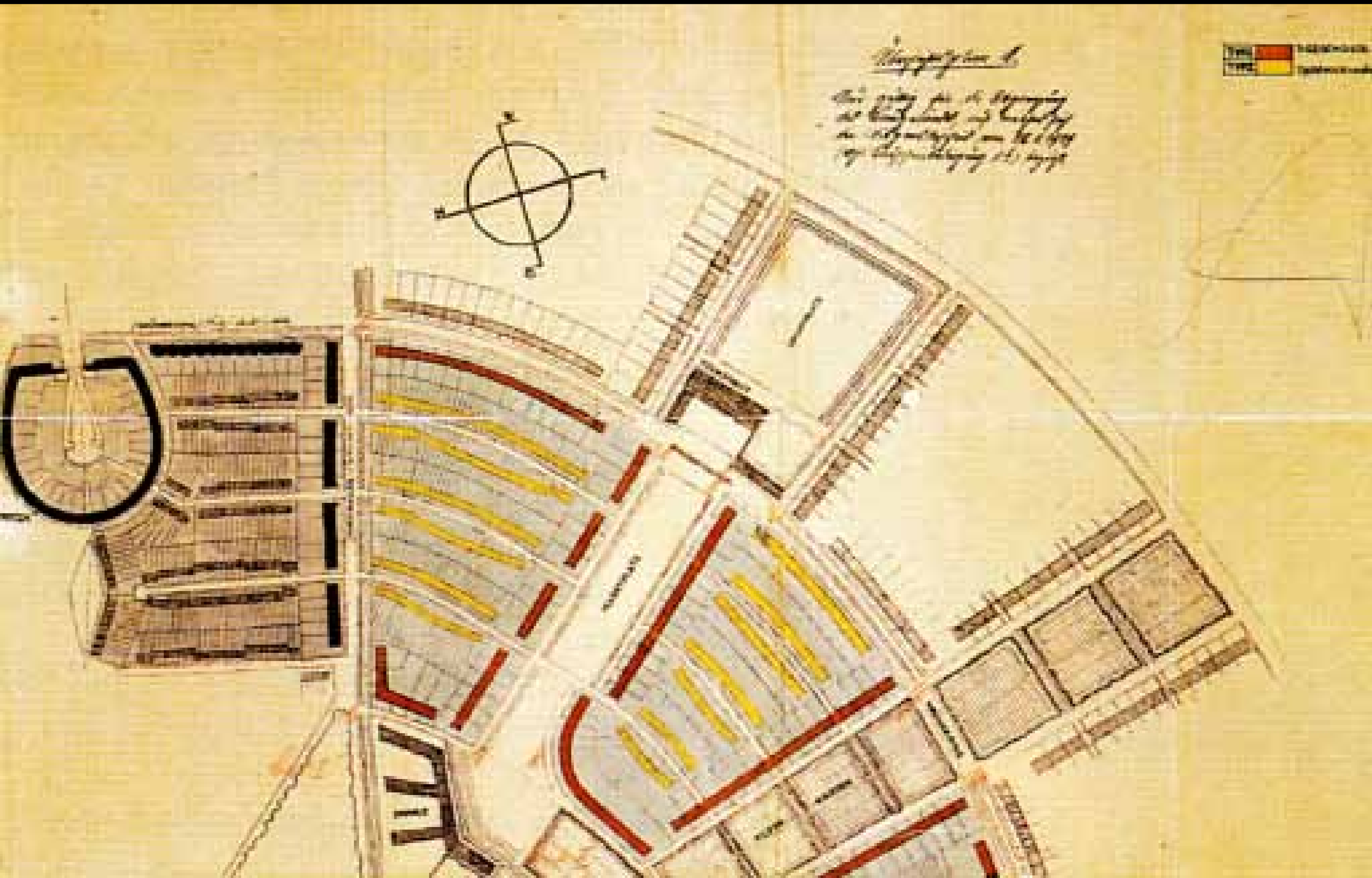
In some periods, for instance during the modernism, rich building decorations were hated and disparaged by the architects, and some even still today, but façade decorations are not superfluous or bad taste. They are impressive, imaginative and above all they give character to the building and the street or square, where it is situated. They provide life and variation to the facade, because of the vivid sun light and shadow on the sculptured surfaces, they tell the spectator about the style and the age, of the building and they represent excellent craftsmanship in the advanced techniques, shapes and designs they expresses.

This, for many quite new discoveries, of this very widespread rich and valuable cultural heritage, opens two interesting aspects:

1) How can we today reproduce, repair and maintain these decorative elements, when many of the crafts techniques, and also some of the materials, are missing or forgotten.

2) How can we today make use of this knowledge, to design modern buildings in historic towns more adapted to the historic environment and impact?

This paper will present a research project in Denmark, where the original crafts techniques and the authentic materials and tools were rediscovered and reconstructed, among others inspired by a study visit to Italy (Firenze), in order to restore and recreate faced decorations on a number of old historic buildings.



Summary / Theme 4

Jørgen Eskemose Andersen[1]
Royal Danish Academy of Fine Arts Copenhagen, Denmark

Housing and The shape of the City
Challenging the concept of 'informal' in Sub-Saharan African Cities
The case of Maxaquene A , Maputo, Mozambique

Introduction
Current definitions of urbanity lead to claims that a large proportion (75% according to UN Habitat) of Sub-Saharan Africa's (SSA) urban population is housed in 'informal' settlements with almost all new housing stock provided 'informally' in contradiction to the "formal" that is defined as planned and regulated by the state. In most cases in SSA cities urban development has no professional assistance in the form of architects or engineers, and what is characterised as 'disorder', as is the case with informal urbanisation, is considered as undesirable, inappropriate, dangerous, unhealthy and un-modern (Folkers 2009, Hardoy 1990, Jenkins 2011, Nielsen 2008, Nguluma 2003, Mitlin, D. 2004, Koolhaas 2006).

In 2003 the UN adopted a new terminology for what over decades used to be labelled as 'informal'-, 'squatter'-, 'illegal'-, 'unplanned'-, 'spontaneous' settlements, "shanty towns" with the term "*slum*" (UN habitat 2003). However, defining what slum implies is complex and this author consider the term as prejudiced and not covering the diversity most informal settlements represents Further the term stigmatises a remarkable share of any city population in SSA (Huchzermeyer 2011, Davis 2007, Harber 2011, Garau 2005).

The basis for classifying housing areas developed by poor people as 'slums' is underpinned by a public health and safety agenda, but in the absence of government recognition and improvement of service provision categorising them as slums in essence shall make many informal settlements ripe for 're-development', which is generally private sector driven. The outcome is often negative for the poor and lower income populations that are pushed out and/or are unable to capitalise on the rising property values (Jenkins 2000, Jenkins 2011). The urbanism and architecture this kind of development is producing is with limited reference to the context in SSA as most new middle- and upper class housing is as prestigious villa type or as gated communities (Adjaye 2011, Andersen 2011, Folkers 2009, Lage 2004).

This paper draws on in-depth longitudinal studies of the peri-urban settlements of Maputo and demonstrates that the 'informal' process is producing self-improving urban form and housing Jenkins 2012). The paper refers to a current project that was aimed at upgrading an informal settlement in Maputo with infrastructure improvements accepting the right of the existing settlers to stay put. However the political reality has proven to take a different stand allowing the private sector a prominent role and a *comprehensive redevelopment project has now substituted the upgrading project*.

The paper argues for government recognition of informal urban areas as a valid and productive form of urbanism. This is, as seen by the author, unfortunately not what is happening currently in the case of Maputo and a new era of urban development in Mozambique is ostensibly emerging based on market principles leaving the urban poor in a vacuum with limited if any influence. The 'disorder' such areas seem to represent and hence by international standards labelled as *slums* is in fact underpinned by social order and the current research evidences this in describing the *living conditions* and the emerging form of *social architecture* in such housing areas referring to the organisation of space i.e. plot organisation, the building technology and the architectural expression that this organisation represent (Andersen 2012, Carrilho 2005, Galicai 2009, Jenkins 2012, Lage, 2004).

Maxaquene A
Maxaquene A is located close to the city centre and represents a long-term unplanned occupation, originating back to the 1920s. Maxaquene is a classic "informal" settlement, developed organically and incrementally without a formal plan, but however with a system of plot allocation as the social order has structured the physical space with some rigour. Today approximately 25,000 inhabitants live in Maxaquene A.

The attractiveness of Maxaquene A is due to the proximity to employment centres i.e. the central city, the international airport and being located between 3 industrial areas. The area represents a number of typical problems in such areas among which high density, few public amenities, poor access roads, poor drainage and rudimentary service provision. Furthermore the area suffers with severe environmental and public health problems linked to the topography as most of Maxaquene A is located in a depression with frequent floods (Municipio de Maputo, b 2011).

Background
The Portuguese colonial government excluded Africans from settling in the 'recognised' area of Maputo, which was developed as a modern city for the white settlers. The black indigenous population working as servants and other manual labourers either lived as in-house servants or were settled just outside the cement city in precarious houses built with reeds (canico in Portuguese and hence these areas were referred to as "the canico").

The colonial government only accepted such type of housing as these would be easier to demolish when the long-awaited urbanization arrived. This led to the proliferation of houses built with reeds which was harvested along the riverbeds in Marracuene district approximately 25km from Maputo. This produced the most striking characteristic of the colonial city: An area called the cement city (*cidade de cimento*) where the white settler population lived and the suburban area called the reed city (*cidade de caniço*) where the indigenous population lived under temporary condition under strict control by the colonial administrators (UN Habitat 2001).

Informal settlements in Mozambique and in Southern Africa
The first generation of informal settlements in Maputo resembles developments in the first years after independence in other Capital cites like Lusaka, Dar es Salaam, Addis Adeba, Ouagadougou and Nairobi.

While in a many African cities, renting soon came to dominate also the informal areas with Kenya as the most extreme case, while Lusaka and Maputo maintained a predominance of owner-occupiers 15 per cent in Maputo, but mainly in the buildings nationalised after independence and hence the corresponding figure for the informal settlements is significant lower making rental accommodation in informal settlements in peri-urban Maputo a rare phenomenon still today. However this may be under transition as recent research has evidenced that renting out living spaces in the inner informal settlements in Maputo is on the rise (Jenkins 2012).

Low income housing
Attempts were made in most of Sub-Saharan Africa after Independence to meet the demand for housing with publicly built so-called 'decent' houses. However this only became showcases for politicians to demonstrate their willingness to care for the growing number of urban poor. The strategy failed throughout and the informal sector took over as the predominant supplier of housing. Already in the 1950s, UN advocated for *sites and services* and other types of schemes combining state planning (land) and investment in infrastructure with self-help construction as the approach to solve the growing housing deficit (Abrams 1966, Payne 1977). Despite the obvious difficulties these strategies have faced the political system continues to promote plots and self-help construction as the solution to the shelter issue e.g. the latest housing strategy in Mozambique (2001) reads…" approximately 300,000 plots and 100,000 houses will be distributed until 2014…" (Canalmoz 2001).

Strongly promoted by World Bank from the mid 1970s a number of sites and services schemes was implemented e.g. in Zambia and Kenya, but the number of plots remained insignificant compared to demand. The strategy of delivering plots with minimal services was also used from the early 1980'ies in Maputo where the intervention has had some impact with more than 10.000 plots being developed which partly is targeted in the current Home Space Research project. As this current documents these site and service schemes are today considered as rather ideal housing areas for the emerging middle class in Maputo, however often complaining on the plot size which predominantly was 12,5 x 25m (Jenkins 2012, Hamdi 1995).

However the burgeoning informal settlements were by the time often cleared as illegal. Such practices still continue in many countries albeit often at a modest scale with the 2005 internationally condemned Operation Murambatsvina in Harare as an exception. However Zimbabwe is a unique case and most countries in the global South it is understood that demolitions do not contribute to solving the housing problem. 'Upgrading' of existing living environments has become the recommended strategy, in most countries often adopted in housing policy documents (Galacai 2009). This is however under threat in a number of countries including in Mozambique.

The historic Maxaquene Project 1976
In the eve of the colonial period, the government had plans to finally eradicate the problem of illegally constructed settlements: This implied construction of neighborhoods "perfectly integrated in Lourenço Marques City, by eliminating the reed houses; the re-accommodation of 50% of the current population; transfer the remaining 50% to transition areas where they would receive assistance for their social improvement". This however never came into being. (UN-Habitat 2001).

After Independence, "The National Directorate for Housing … developed a major upgrading pilot project in bairro Maxaquene just north of the cement city (1977-79)" (Pinsky 1983). In a participatory manner the Maxaquene project succeeded to relocate the surplus population that were to give way for roads and open spaces. This resettlement took place in nearby Polana Canico on land that at the time was relatively vacant as is was owned by a Portuguese speculator awaiting the city to expand. Polana Canico is today a quite densely occupied area still undergoing transformation with signs of two storey buildings rising as the area is close to the city centre and pressure for well located land is high. In fact Polana Canico is today considered as blocking the expansion of the cement city and recently the municipal authorities have launched an international tender for technical proposals for the *re-development* of the entire Polana Canico an area housing some 60.000 inhabitants.

The 'Maxaquene Project' became a model for upgrading projects (UN Habitat 2001) and a 'blueprint' for the future of the towns in Mozambique was issued in 1979 (Pinsky 1983). In the period 1981-87 planned subdivision continued as a strategic attempt to plan ahead of the urban front and hence avoid the need for later expensive upgrading exercises. The City Authority planners took advantage of the political climate at the time with a pro-poor planning approach and the key issue with availability of land was relatively easily solved as land was nationalised in 1975 and hence the city authorities were in a position to identify appropriate land for urban development. "The city council planning staff … focused on developing basic land layouts in expansion areas, especially areas that were highly likely to be occupied spontaneously, attempting to create a zone of planned residential land around the city in the most suitable areas, hence pre-empting spontaneous occupation this was called the "Basic Urbanization Programme" (Jenkins 2011).

The 1977 Maxaquene project was in line with the FRELIMO ideology at the time and popular participation was put into practice. The lay-out in blocks, public and open areas was possible due to intense meetings in locally established planning committees and aided by innovative, non-bureaucratic land registry and building permit systems (Pinsky 1983). Plots were organized in blocks of 300 inhabitants each (70 to 80 families) per hectare (UN Habitat 2001). A major achievement was the improved pit latrines. This was followed up by the city wide "Sanitation Program in 1985 that was then transformed into a National Low cost Sanitation Program. This programme is still active today albeit at a much lower scale however over the years an unknown number of improved pit latrines have been built and the concept of an improved pit latrine is common knowledge in today's Maputo' informal areas (Brandberg 1985).
According to Pinsky, in the late 1970s, only ten percent of the houses areas like Maxaquene were built in blocks. As there was and is a high sense of security of tenure, improvements gradually changed Maxaquene and today very few houses are built in caniço. Mozambican scholars have labelled this process the "cementification" of the canico highlighting the enormous investment this individual process represents with no assistance from neither government nor the private sector (Carrilho 2009).

To facilitate more comprehensive strategic urban development, 'Maputo City Structure Plan' was approved in 2008. Key elements and objectives of the Plan include: The restructuring and re-development of 3750 ha of urban 'slums' in the 2008-2018 period.

The structure plan hence established two main categories of urban development: already 'urbanized' areas and areas to be 'urbanized' – urbanisation here meaning an acceptable level of urban development in terms of land use planning and control, infrastructure and services provision. The plan indicated that some 40% of the "areas to be urbanized" have formally marked plots …. 'Areas to be urbanised' – otherwise known as 'unplanned' areas - had no formal land demarcation and registry, generally deficient infrastructure and often relatively high density, and were estimated to cover about 47% of the total area of the city (Municipio de Maputo, a 2008).

Participation
According to a newly approved housing *Policy and Strategy* (Politica e Strategia de Habitacao 2011) participation is still a key element when developing housing projects in Mozambique: "Participation by various segments of society, such as, the public, private and civil society, to facilitate each family access to urban land and housing, environmentally sustainable, in order to enable the control of actions and transparency in decisions and procedures" (ibid).

The case of Maxaquene A raises a number of issues related to participation:
- To which extent have the residents been involved in discussions concerning the first upgrading plan?
- Was the process allowing time enough for the residents to understand the project and the consequences for their individual lives?
- Have the conducted workshops had substantial numbers of active residents?
- Was the process guided and facilitated only by the local political structures *informing* the population on the plan?
- What expectations have been raised during the process?
- Have the residents been informed formerly to the change in municipal approach to the solution of the Maxaquene A problem?
- What is the reaction on part of the local political structure on the recent development and how are these structures approaching the local resident's vis-à-vis the current situation?

Many of these issues are complex and interwoven into local power struggles and municipal ambitions to create the best conditions for the *modern city* to emerge with as limited as possible of public spending. Hence the private sector is expected to intervene and follow-up after the municipal planning has paved the way with local urban plans to be followed-up with bylaws enabling the private sector to buy out the residents at market conditions and subsequently develop the land. The draft bylaws do however envisage a certain percentage of social housing as a precondition when developers are intervening. Experiences from other African countries does however indicate that such social housing programmes rarely reach the poor and most often the middle class moves in and transform such areas into what by them is considered as proper and decent dwellings (Nkya 2008).

This raises a number of legal issues as to what extent such developments are in accordance with the spirit of the law (Conceicao 2004, Dinageca 2001). According to an official document on land regulation, people are supposed to be included in the investigations: "The investigation on the occupants is carried out on a continuous manner in the area of the plan by a technical team, which must also hear the representatives of the local community" (Mozambique land regulation 2006). A paper worked out for the Government by the Centre for Habitat Studies and Development, Eduardo Mondlane University emphasizes the role of participation: "The first and indispensable element

Jørgen Eskemose Andersen
Royal Danish Academy of Fine Arts Copenhagen, Denmark

in any planning strategy is participation. There are no formulas for the eradication of the slums." "The key to success is participation, and participation is not obtained by interpreting and applying technical documents. It must be achieved and take shape in the field, with residents, through constant contact and relations" (UN Habitat 2001).

In the case of Maxaquene A, NGO's have been active for some years assisting the residents in minor improvements such as better drainage and improved pit latrines. These NGO's are operating as partnerships between local Mozambican NGO's and international NGO's and the activities are to a certain extent coordinated with the local structures and hence formerly coordinated with the relevant city authority departments. However in practice such NGO's often works quite independently directly with the residents and at times with residents associations however in general the impact of these interventions are limited (Almansi 2001).

Conclusion

The political interest in the re-development and modernisation of the city adjacent to the cement city is obvious as the pressure on well located land near the city centre is growing. The private sector is more active than ever since independence in Maputo and appropriate land is now a scarce resource as all land outside the formal city is occupied "informally".

In attractive locations close to the sea this process has been taking place for some years with a number of gated communities being built and consequently residing informal settlers have been bought out. This process is now moving into other sites in the interface between the formal and the informal city giving way for condominium type of middle- and upper class housing schemes. As Maxaquene A is located along the major road leading to the airport politicians has for years seen entrance to the city as an eyesore. Closer to the airport, which has recently been rebuilt by a Chinese consortium and hence represents modernity and progress, the municipal authorities, has fenced off the informal settlement with a high wall making the informal settlement invisible for visitors arriving in Maputo. By the local population this wall bears the name; the *wall of shame* (*Muro de vergonha*). Time will tell which metaphor the local population shall invent as Maxaquene A over the coming years evolves. Develop either as a people oriented process continuously providing space for the existing population or as market forces supported by the political and professional planning elite eventually eliminating and eradicating almost 50 years of informal urbanisation that has facilitated poor people with access to housing which both the state and the private sector has failed to support sufficiently.

[1]This paper has pointed to contradictions in the urban planning system in the case of Maputo and highlighted the issue of access to housing for the urban poor. Former deliberately pro-poor approaches to housing in Maputo appear to be in a transition towards more market oriented approaches. The paper hence ends with the following question for reflection: Why was it that Maputo Municipality in the first run deliberately developed terms of reference based on participatory methods in the case of Maxaquene A, but after being presented to the project developed by the hired consultants the project was turned upside down and the plan elaborated by the consultants was abolished. An alternative re-development plan was developed which in turn paves the way for the private sector to intervene?

Bibliography

Abrams, C, 1966. *Housing in the Modern*. Faber and Faber, London World.
Adjaye, A & Allison, P 2011 *Adjaye · Africa · Architecture: A Photographic Survey of Metropolitan Architecture*, Thames & Hudson: London
Almansi, F. 2011. *Los Limites de la Praticipacion*. IIED America Latina Publicaciones. Argentina.
Andersen, J. et al 2011. *Land and revenue in a"traditional town" in Ghana: The case of Nkwanta sub-division in Mpasatia. Environment & Urbanisation*, volume 23, number 2, 2011
Andersen, J. et al 2012. *Built Environment Study*. www.homespace.dk
Brandberg, B. INPF 1985. *Manual de Latrinas Melhoradas*. Secretaria de Estado do Planeamento Fisico, 1985
Canalmoz, 2011. *Governo aprova nova politica e estrategia de habitacao*
Carrilho, J. et al 2009. *Desafios para Mozambique 2010. Desafios no Dominio da Habitacão*. Marimbique-Conteudos e Publicacoes, LDA
Carrilho, J. Et al 2005. *Era uma vez uma palhota. História da casa Moçambicana*. FAPF 2005, Maputo.
Conceicao, M. 2004. *Manual de Direito da Terra*. Centro de Formacao Juridica e Judiciaria. Mozambique.
Davis, M. 2007. *Planet of Slums*. Verso 2006.
DINAGECA 2001. *A Terra. Lei e Regulamento sobre o Uso e Aproveitamento de Terras*
Folkers, A 2009. *Modern architecture in Africa*, Sun: Amsterdam
Galicai, S. 2009. *Urbanismo Informal*. Universidad Autonoma Metropolitana. Azcapotzalco
Garau, P. et al 2005. *A Home in the City*. Earthscan, London.
Hamdi, N. 1995. *Housing without Houses*. Intermediate Technology Publications Ltd
Harber, A. 2011. *Diepsloot.* Jonathan Ball Publishers. Johannesburg and Cape Town.
Hardoy. E. 1990. *The Poor Dye Young*. Earthscan. London
homespace.dk (website under construction)
Huchzermeyer, M. 2011. *Cities with "slums". From informal settlement eradication to a right to the city in Africa*. UCT Press.
Jenkins, P. 2000. *Emerging urban residential land markets in post-Socialist Mozambique: The impact on the poor and alternatives to improve land access and urban development. An action-research project in peri-urban areas of Maputo*. Centre for Environment & Human Settlements, Edinburgh Scotland
Jenkins, P. 2011. *Querying the concepts of formal and informal in land access in developing world - case of Maputo", sole author of chapter in The Formal and Informal City – what happens at the Interface*, Vaa & Hansen (eds), Nordic Africa Institute, Uppsala, 2004
Jenkins, P. et al 2011. *Governing informal settlements, on whose terms? Developing Cities between the formal and the informal. ECAS 2011* - 4th European Conference on African Studies. NAI, Uppsala.
Jenkins, P. 2012. *Understanding "home space" in the African city. A case study in Maputo, Mozambique*. Synthesis Report. www.homespace.dk
Jenkins, P. 2012. *Understanding "home space" in the African city. A case study in Maputo, Mozambique*. Context Report. www.homespace.dk
Koolhaas, R et al (2006) *Lagos wide & close - interactive journey into an exploding city* (DVD)
Lage, L. et al 2004. *Traditional Informal Settlements in Mozambique: from Lichinga to Maputo*. FAPF, Maputo, 2004.
Mitlin, D. 2004. *Empowereing Squatter Citizen. Local Government, Civil Society and Urban Poverty Reduction*. Earthscan. London.
Mrema, L. 2008. *Public Open Spaces as Everyday Architecture*. The Royal Danish Academy of Fine Arts, School of Architecture. 2008. PhD Dissertation
Mozambique Land Regulation. December 26, 2006. *UN- Habitat*
Municipio de Maputo, a. 2008. *Plano de Estrutura Urbana do Municipio de Maputo* Septembro 2008.
Municipio de Maputo, b. 2011. *Maxaquene A. Plano Parcial de Urbanicacao.*
Neuwirth, R. 2006. *Shadow Cities. A billion Squatters a New Urban World*. Routledge.
Nkya, T. 2008. *Why Planning Does not Work*. Mkuki na Nyota Publishers Ltd. Tanzania.
Nielsen, M. 2008. *In the vicinity of the State. House Construction, Personhood and the state in Maputo, Mozambique*. Copenhagen University. PhD dissertation.
Nguluma, H. 2003. *Housing Themselves. Transformations, Modernisation and Spatial qualities in Informal Settlements in Dar es Salaam, Tanzania. Built Environment Analysis*. Stockholm 2003. PhD dissertation
Payne, G. *Urban Housing in the Third World*. Leoard Hill, Great Britian.
Pinsky, B. et al 1983. *Territorial Dilemmas: Urban Planning and Housing in Independent Mozambique.* WUS-Denmark
Politica e Strategia de Habitacao. 8 marts 2011, 1 serie, numero 23
UN Habitat 2001. Cities without Slums-Cities Alliance. UN-Habitat
UN Habitat 2003. *The Challenge of Slums. Global Report on Human Settlements 2003*. Earthscan. London.

Elisa Bernardi
Politecnico di Milano, Italy

Domestic green spaces in contemporary cities

Introduction

Over years, the use of vegetation in dwelling areas covered several functions: symbolic, aesthetic or ornamental one as well as production and regulation of the microclimate. Today, the integration of green with constructed spaces assumes particular importance, especially as a valid solution to answer the need of improvement in the quality of human life. Though contemporary cities are addressing efforts to reduce environmental burdens and polluting emissions, an intensive and wild urbanization in most of the world's regions is affecting the availability of green spaces (Lambertini, 2007), which would naturally contribute to reduce climate warming through a rebalancing of local micro-climates, to decrease acoustic and electromagnetic pollution, and to safeguard the biodiversity by the creation of new habitats.

In this study, we investigated "transitional spaces" in multilevel buildings (e.g. balconies, windows, terraces, and bow-windows), as the link between people and the environment: in this sense, transitional elements in architecture may offer people who live the *liquid modernity* (Bauman, 2000) the chance to discover a solid space, a quiet area where thinking or meeting people and enjoying the open air.
Such spaces may offer innovative solutions in architecture and landscape design to connect the outside and the inside spaces with their thresholds and intermediate borders. They also allow the *camouflage* and protection of the volumes, and contribute to reduce the energy consumption through summer and winter insulation. These improvements will even result in increasing the aesthetical and economical value of buildings.

Evolution of green spaces

The human interest in green roofs spans ages, from the Hanging Gardens of Babylon, considered one of the seven wonders of the ancient world, to the roof gardens of Le Corbusier. Since the early nineteenth century, many events: social, political, economic and artistic, have influenced the urban and architectural development of our cities. Modern architecture was committed to solving problems caused by the uncontrolled proliferation.

During the Modernism great attention to healthy living has been given: the idea of architecture as a mechanism to improve health and the body developed in the 1920s and early 1930s (Wilk, 2006). At the International *Exposition of Modern Industrial and Decorative Arts* in Paris in 1925, Le Corbusier presented a prototype of a dwelling unit that he called Pavillon de *L'Esprit Nouveau*. To represent the esprit of modern age he made use of a dwelling for a common man and wrote: "*Les hommes sont mal logés, cause profonde, cause véritable des bouleversements présents*". The "new spirit" was closely linked with the social and human problems of this time and with the need to give the man a more satisfying place to live (Le Corbusier, 1927).

In the 70s, the tradition of the English "Urban Planning" and the contributions of American and European environmental movements, give birth to a new sensibility on the relationship between man and nature that takes sustainability as the guide for the environmental changes at different scales. An ecological approach in the design and management of the city, based on control of environmental variables and oriented to the integration of green spaces was born and began to develop first in the United States and then in Europe (mainly in Germany, Netherlands, and the Great Britain). Stimulated by the energy crisis of the 70s, it highlighted the microclimate function of the vegetation encouraging the "environmental" use for the comfort of "anthropic worlds". So, the idea of a "green city" emerged: a re-naturalization of the city through greening urban initiatives and the creation of vegetated natural and artificial corridors, especially where the horizontal space does not allow the inclusion of additional and appropriate green spaces. In the same period, a movement called "green architecture" began to appear with James Wines and Emilio Ambasz. It consisted in developing a form of architecture strictly integrated with the ecological aspect.

After the great "works in concrete", from the second World War until the 80s, new policies of "greening" of cities spread following the tradition of green structures at different scales: from large parks and green way to garden roofs, green walls and terraces.

In 1981 James Wines with his group SITE proposed a provocative theoretical project, named *High Rise of Homes*, made up of a vertical structure and different style houses with their own private garden (SITE, 1982.) Their aim was to develop a design that represented an alternative to the generic, mass-produced urban high-rise apartment building. The ten to fifteen story high residential complex could either be newly built made up with steel and concrete framework of existing factory buildings. Each level of this complex consisted in plots of land with streets, upon which individual houses would be custom-built according to the preferences of the owner. The houses were to be built around a core in a rectangular or U-shaped configuration, to ensure that all of the plots received natural light. *The Highrise of Homes* was to combine the conveniences of urban living with a sense of individuality not typically found in a large city.

Green spaces in contemporary

As a symbol of modernity, the roof garden evolved today into a new spatial ideology definition as well as technological improvements. It allows us to expand the interior room by offering an unknown perspective onto the larger natural and built environment. This is particularly relevant for the urban areas, where roofs constitute a large percentage of the overall surface, and where the growth of metropolis is expected to go hand in hand with the pursue of the humankind to an upgrade in the quality of life.

In the last decade there has been growing interest in the vertical green, thanks to a new environmental awareness, stimulated by the spread of a regulation on eco-sustainability and energy efficiency, and of a new attention to the use of new techniques and languages to meet the desire to bring more nature into the living spaces.

The terrace is the most popular outdoor space adjacent to housing and it is often transformed in a real hanging garden, especially in cities, where there is more demand for green. The terrace is a typical element of the temperate zones, and it can refer to any type of surface, uncovered or only partially covered, jutting or on the top of a building. In this way, the redesign of abandoned areas and resettlement and planting operations of smaller urban areas (residual areas and courtyards) become an opportunity for intervention.

The use of green terraces is connected to the functions carried out at ground level and most of all inside the apartment. It is important to design it to create comfortable and protected spaces where you perceive a sense of intimacy, that generally shield and screen against wind and noise, highlighting special scenic landscape views.

Often the use of balconies, terraces, flat roofs of buildings as vegetated rest areas is the only green note in the crowded urban environment and constitutes a potential resource of great value: a space for free time and to reduce feelings of isolation for those who live in very tall buildings. Thus, close to public parks, a new typology of urban green with a private nature (green courtyards, green walls, green roofs) takes shape. It can actively contribute both to the energy saving and to the conservation of biodiversity in urban and metropolitan scale.

The hanging gardens have a privileged relationship with the exteriors: an additional living space on an artificial soil, recreates an unexpected garden. Sometimes the vegetation covers the entire building, so it is no longer the predominance of one element over another, but a harmony of architecture in its environment (Zoppi, 1990).

The functions of urban green space, for environmental control, include changes in microclimate (temperature, humidity, wind), air purification, noise reduction, antiseptic operation, soil conservation, water purification, biodiversity conservation, and psychological function (Bellomo, 2009). In this symbiosis between natural and artificial we can also find the "green skin" that has the effect of decreasing the thermal load on the walls, especially those oriented east-west, the filtering of radiation in the glass walls, the decrease of radiating load in the exterior.

Hanging gardens require special design features having to guarantee the stability of the roof. Before transforming a roof, a terrace, a balcony in a garden, it is important to make sure that the bottom is sealed, well insulated and the structures are designed to support any additional weight. The land or the used support must be analyzed to learn physical-chemical parameters such as particle size, organic matter, pH, limescale content in the main natural elements. The volume of the soil will be quantified according to the characteristics and number of plants chosen: for a minimum volume you can choose a type of extensive herbaceous vegetation for which a minimum thickness of about 10 cm of lightened earth is enough.

Shape and size determine the appearance of these green spaces. Their design must be simple, configuring a readable space, made up of parts clearly linked by a guiding principle disclosed above and aim to ensure that the garden becomes an extension of the house in an internal-external relation, that will interact throughout all year. A bond that can be physical and visual, which is reinforced by the materials used, and combined with plants, taking into account the position, the technical and aesthetical data.

Relevant are also the exposure and the location of the terrace, especially for the choice of plants because each species requires a different arrangement, also based on the amount of light it needs. In the division of space, as in the distribution and choice of plants, the shape in relation to the building must be assessed and especially the relationship established with the interior space as well as the panoramic views from the surrounding landscape (Zoppi, 1990).

Exemplifications

The idea of residential and vertical planted building is echoed today in many residential buildings. We are reporting here three interesting contemporary case studies, different for location, function, layout and social class of the inhabitants.

Next 21 by Yositika UTIDA, SHU-KO-SHA Architectural and Urban Design Studio for Osaka Gas (1993), is an experimental residential complex project demonstrating new concepts of multi-family housing units that incorporate sustainable design methods and advanced technologies. The design of this building was conceived with a hypothesis that a highly individualized lifestyle is expected in the new century, to solve issues relating to high-density urban housing and resource conservation in building. The project was sponsored by the Osaka Gas Company, which consists of 18 individual housing units, designed by different architects.

The building was initiated in order to test new models to reduce energy consumption and to preserve the environment through waste processing and greening waste at the same time as creating apartments that suit and can be adapted to individual residents' needs and lifestyles.

User participation was an integral part of design decision-making processes. The creation of a green inner city oasis for human occupants as well as for wild birds and insects was reinforced by the creation of an open, three-dimensional street. It further enhances the green effect by enabling occupants to experience nature as they move through the building.
The project is organized around three zone types, each based on a 90 centimeter grid: the house zones, the street zones, and the public zones.

One of the objectives of the project was the incorporation of nature in the design of collective housing. Grass and trees were planted on the roof, and small atria were created in the balconies. In addition, a courtyard, called ecological garden, is located on the ground level and is stocked with plants that attract wild birds and insects. This infusion of nature in the building made the occupants become more conscious of seasonal changes in an urban setting.

Another interesting example is Flower Tower by Edouard François and Patrick Blanc (landscape and botanic advisor) in Paris (2004). Edouard François has long been involved into the design of buildings, shaping a strong connection with the natural environment.

Commissioned by *Office Public d'Amenagement et de Construction of Paris*, a public French organization managing construction of housing or public facilities buildings for citizens with low-income, the building deeply aims to the integration of the environment, basically by one prominent mean: the terraces surrounding the whole volume of the housing building are provided with 380 flowerpots in which bamboo plants are nurtured. The 10-storey (with 3 basement levels underneath) and 30-apartments building, through this device, acts line an extension of the park located at the bottom of the building, to be grown in continuity with the façade of the other buildings.

Beside this context-specific feature, another reason that inspired the design of the complex was the widely diffused habit of Parisian citizens of planting and nurturing the balconies with different species, performing a various and lively environment, remarkable throughout the city. As the architect said, this habit expresses the desire of living in a more naturalized environment, in a city greatly known for being very dense and crowded: "balconies with plants filter out the city" while "establish a distance with the city and minimizes its density". The architect adds "this practice might be described as a certain form of heroism" given that "the balconies are not meant to be planted; there is no water spot provided, the pots are all transported to different levels, they are often very small but yet the plants grow" (Jodidio, 2006). Thus the building relates with the wide context of the city and formalizes this practice by featuring the flowerpots that give it the shape of a giant display of potted plants.
The bamboo plant is a grass specie able to grow up to 30 meters of height, resilient to low temperature and high wind. As the architect said "the elongated leaves of the bamboo plant resound when wind passes through, which makes the inhabitants feel like living in a tree" (Jodidio, 2006). Beside this, the plants are also performing a filter to the sun-light and to the heat, combining an enjoyable feeling of living "in the nature" with enhanced performances.

In order to make the resistant bamboo last longer, every flowerpot is provided with a water sprinkler automatically activated. The system is feed by pipes built in the metal balustrade surrounding the building, while the pots are attached to the balconies-structure in order to prevent them to be moved by the residents and to be torn off by the wind.

To get to the apartments a glazed panoramic elevator, facing the park on the side, provides the view both to the inner side of the block and the planted balconies on the sides. The design of the apartments is also carefully studied: every living room is placed on the south-west side of the building, providing the view on the park and enjoying the sun-light and heat, and no apartment is the same as the others; in order to enable the inhabitants to manage a house that fits with their needs and desires, beside being able to be re-set when new people move in, the floors are all self-bearing and do not feature any supporting punctual column, being only overlaid on the floor below.

Finally the building is characterized by a particular mixture of gray and white concrete, reinforced by bamboo-fibers, which was cast and arranged randomly on site, being the sequence of gray and white plans related only on the arrival order of the supply trucks on the construction site. This feature performs a further feeling of a building strongly connected to the environment, since it looks widely determined by natural cycles.

The third example is *Clinton Park* by Ten Arquitectos (project 2006) at the Western edge of Midtown Manhattan; it hosts the Mercedes House at the base and provides 27 floors of housing above. This building is different from the previous two, mainly for its shape and for the high cost of the apartments: residential multilevel buildings were originally born as dwellings for social housing. Today, due to the increasing urbanization of the cities and few investments in social housing, combined with the high

costs of creating a technological green terraces, there are more and more green luxury houses.

The residential form creates a total of 865 units slope up in a terraced typology. Securing light and air for a great majority of apartments, the double-loaded corridor shifts diagonally across the site in a unique orientation to the Manhattan grid, reducing the building mass adjacent to the neighboring buildings. Each floor steps up from the one below, allowing open views of the park and the Hudson River and providing private green terraces on every floor.

Conclusions

These examples require a multi-disciplinary knowledge and different professional qualities to give an answer to the conflict between artifice and nature. Architecture and landscape design, social dimension and historical glance, ecological and botanical issues increasingly expanded since the twentieth century and intensified when the introduction of an extensive media network that wraps our planet like a giant spider web took place (Dorfles, 2003).
Today there is an insufficient awareness of the limits and the implicit values in the relationship between man and nature on one side, and nature-artifice on the other. We have to consider "nature" that referred to human intervention, which is an "artificialisation" of it. Only if we become aware of the existence and the potential of these artificial means and of new technological achievements, we could manage to return to the individual a balanced relationship with nature. We are living in a period of anti-natural. We can survive in a world that is not totally dehumanized only if we are able to convert these artificial elements in nature. Hanging gardens can respond to the need to restore the synergistic relationship between man and nature, allowing a continuity of everyday domestic interior and exterior spaces.

Bibliography

Bauman, Z., *Liquid Modernity*, Polity, London, 2000.

Bellomo, A., *Pareti Verdi: nuove tecniche*, SE, Naples, 2009.

Dorfles, G., *Artificio e natura*, Skira, Geneva-Milan, 2003.

Jodidio, P., *Architecture: nature*, Prestel, Munich, New York, 2006.

Jong-Jin, K., with Brouwer, R. and Kearney, J., *NEXT 21: A Prototype Multi-Family Housing Complex*, University of Michigan, Ann Arbor, 2002.

Lambertini, A., *Vertical Gardens: bringing the city to life*, Thames&Hudson, London, 2007.

Le Corbusier, *Towards a New Architecture* (*Vers une Architecture*, 1927), Dover, Mineola, 1986.

Osaka Gas Experimental Housing. NEXT 21, in «The Japan Architect», n.17,
1995.

Osaka Gas Experimental Housing. NEXT 21, In «The Japan Architect», n.73,
2009.

Schneider, T., *Flexible Housing*, Architectural Press, Boston, 2007.

SITE, *Highrise of Homes*, Rizzoli, New York, 1982.

Venturi Ferriolo, M., *Etiche del paesaggio. Il progetto del mondo umano*, Editori Riuniti, Rome, 2002.

Wilk, C., «The Healthy Body Culture». In *Modernism, 1914-1939: Designing a New World*, V&A Publications, London, 2006.

Zoppi, M., edited by, *Progettare con il verde. Manuale di progettazione del verde e dei vuoti urbani*. *3. Il giardino da abitare*, Alinea, Florence, 1990.

Caciuc Cosmin
University of Architecture and Urbanism Bucarest, Romania.

Urban acupuncture: improving the public space between the Socialist block of flats and the old city in Bucharest

The image of Bucharest is still dominated by concrete blocks of flats built during socialist years: more than two thirds of its population lives in apartments along the socialist boulevards and in so-called "dormitory neighborhoods". The "concrete curtains" were generated along the main boulevards in the central area, producing huge contrasts in the urban texture. Three types of problems could be highlighted in this context: 1) physical degradation; 2) social degradation and identity problems; 3) administrative difficulties concerning their rehabilitation: no coordination among authorities, tenants and professionals.

Voluntary initiative in the public interest

"Magic Blocks"[1] has started in 2009 as a workshop for urban regeneration in the large areas defined by socialist blocks of flats, exploring the social and cultural resources beyond the strictly technical rehabilitation. The aim of this voluntary initiative was to define a model for urban analysis and intervention valid not only in Romania, but also in other Eastern European cities confronted with similar situations. It looks for a strategy development, real-life programs and pilot project initiation.

"Behind the Concrete Curtain"[2] was a second workshop organized in 2010, further developing the ideas launched by "Magic Blocks". The Zeppelin Association and Point 4 (from Bucharest), together with Archis Interventions/SEE (Kai Vökler) and Hackenbroich Architekten (from Germany) focused on Calea Mosilor Boulevard – one of the major axis in Bucharest, developed during the 80s. The participating members shared a common vision for Bucharest: stimulating a transformation from the present situation (derelict areas, wastelands, intensive and wild parking, unrelated bits of green space and edges of historical area) to a better future, guided by new principles for intervention in the public space, opening up of the "concrete curtain" through public functions, and implementing a regulation system concerning private and public interventions: parking, tertiary development, cultural & community facilities etc.

Mapping an analyzing a situation

The first step of this analysis was to identify three zones aling that axis: 1) an "intervention zone" between two urban levels (blocks of flats and old houses), which is a public property;
2) a "buffer zone" where new regulations should be proposed for a healthy development, and new investments;
and 3) a "protection zone" defining an urban heritage with specific regulations. The second step was to integrate the urban level (planning, regulations and actions) with a strategy for public space interventions (small and cheap architectural actions called "urban-acupuncture" in collaboration with local communities). We then speak about a "bottom-up" urbanism and immediate actions with visible results in the city.

A certain urban morphology emerged during this analysis: open spaces (green areas + others types of surfaces), meeting and social interaction places, the old urban fabric, the occupation of free space by cars, and property (public or private spaces). Five prototypical urban areas were highlighted: Type 1 – "Direct Collision" (uninterrupted rows of apartment buildings cutting historical areas);
Type 2 – "Diffuse Border" (setbacks from the general alignment of the boulevard);
Type 3 – Hybrid Backspace (intact historical blocks with some aspects common to Type 1 and Type 2);
Type 4 – Enclosure (areas with a semi-public character); and
Type 5 – "Compact Socialist Area" (spaces looking more or less as courtyard). The common issues of these types are: fenced of and partly privatized open green space, undeveloped meeting places (or existent only around street vendors), collision in urban fabric, and chaotic car parking (consuming almost the whole public space) [il. 1].

Principles of improvement

The strategy for urban improvement is structured on four levels: proposing new activities in the intervention zone, reorganizing the public space (public space accessible by cars, public pedestrian area, semi-public pedestrian area, private space plots), coherent regulations and insertions of new functions in buffer zone.

Type 1 is defined by the principle of "Urbanisation",
Type 2 by "Integration into new fabric",
Type 3 by "Cleaning Up",
Type 4 by "Urban Block"
and Type 5 by "Neighborhood courtyards".
Types 1-4 follow the concept of densification (reorientation, spatial reorganization), whereas Type 5 is defined by the concept of activation (energizing the place by activity and use). "Urbanization" (related with the condition of "Direct Collision") relies on creating public and semi-public spaces in the intervention zone, reinforcing the connection between the space of the boulevard and the area behind the "concrete curtain". "Integration into new fabric" (related with the condition of "Diffuse Border") aims at generating pedestrian zones and intimate urban spaces, protected from car-related spaces. "Cleaning-up" (related with the condition of "Hybrid Backspace") is a strategy of intelligent improvement of space by reshaping and insertions, that answers the needs of the inhabitants. "Urban Block" (related with the condition of "Enclosure") relies on achieving the quality a quiet "backyard" turned towards the interior of the ensemble and adjacent to the courtyards of the old buildings. "Neighborhood courtyards" (related with the condition of "Compact Socialist Area") aims to transform the amorphous and semi-open existent courtyards into a protected semi-public spaces with limited car access, extensive greenery and small-scale functions.

Ten points of interest (varying in different measures from case to case) are highlighted at this level:

> commercial (terraces, café, ground floor commerce, shopping, tertiary);
> meeting place (square, fountain, secret place, covered roof, viewing platform);
> recreation (sunbath/shower, fruit trees, hammock, seating, pocket park, picnic, semiprivate garden, playground, swimming pool for children);
> parking (underground parking in new buildings, green parking area, free parking, parking access);
> cultural (info point, internet access point);
> social (indoor meeting places for home owner associations, community center);
> sport (basketball, skating, bicycle parking, chess, ping pong, outdoor gym);
> entertainment (outdoor cinema);
> cultural (info point, outdoor gallery, public space art, outdoor stage, graffiti zone);
> technical (garbage disposal, carpet cleaner).

Intervention

Following the urban analysis, the real interventions tried to offer answers to specific problems (however limited and symbolical). They had to be low-priced, meant to be carried out immediately and coherent with the general proposal (future refurbishment). They involved the local community and focused on derelict and non-conflictual places [il.2]. The strategy implied an extension of the public space / usage to overcome present borders, urban connection, activation of non-spaces and inaccessible spaces and community action.

The first intervention was an urban connection called "A passage between two worlds", a response to the situation of "direct collision". Its strategy, the "urbanization," focused on a corridor (an open passage at the ground floor) between the main boulevard and the area behind the blocks of flats. At this level, the passage turned into a gate to the new urban space and the old city, and to an ensemble of small squares, parks and spaces for sport. The real action consisted in partially painting the gangway walls, while stripes of bright color with five squares framing remained of the existing graffiti, recalling the idea of an urban art gallery. Those frames were also an invitation to add new graffiti works in their perimeter [il. 3].

The second intervention was a community action called "A place for the community", also as a response to the situation of "direct collision" and following the strategy of "urbanization". The refurbishment of a platform surrounded by technical buildings implied painting a flat area for sports, play and meeting, adding features that would make space safer and friendlier, as a bench created by StudioBASAR. That piece of urban furniture was designed in such a way to offer multiple possibilities for the everyday use: sitting, playing, chatting, overseeing etc.
The desire behind these actions was to reinforce the existing social phenomena and to accentuate cohesion between local inhabitants [il. 4 & il. 5].

The third intervention, called "Please step on the grass", was an extension of public space / usage, as a response to the situation of "diffuse border" and following the strategy of "integration".
As a symbolic gesture, it challenged the way in which green spaces are surrounded and made inaccessible by small fences. Based on wooden modules painted in orange, an unconventional urban furniture invited people (especially kids) to step inside the space they have the right to use. Other modular pieces were added inside the grass area to reinforce the idea of active playground / meeting place for all ages [il. 6].

The fourth intervention, "An urban living-room", was an activation of a non-space, as a response to the situation of "hybrid backspace" by a cleaning up strategy into a small abandoned space, defined by a rest of a former construction and a concrete parapet. Inspired by ready-made art, that intervention involved recovered chairs and a cloth hanger, set around a gravel area, suggesting a quiet open-air living room where people can talk, relax and play [il. 7].

Final premises for "urban-acupuncture" and "soft urban surgery"

Two essential principles stand out for the interventions on "concrete curtains": 1) a simple set of rules for their upfront in order to control the architectural image ("kits" - standard units for windows / doors / balconies, advertising solutions); 2) urban activation of the terrain vaguely related with their back front to trigger an improvement process. The main arguments for "urban-acupuncture" and "soft urban surgery" are the lack of space behind the "concrete curtains" (construction of new buildings is extremely difficult or impossible) and the impossibility of extensive demolitions for economic and social reasons. Beside those limitations, a large vision is necessary to complete such refurbishments: "Interventions should not be restricted exclusively to solving the parking problem or landscaping some green areas; the aim of interventions should be the creation of attractive public spaces, integral to the city's overall fabric and connectivity. Such spaces should fully participate in activating the fringes of the old neighborhoods as well as the areas behind the lines of the blocks. In urban rehabilitation, the creation of quality public space triggers almost automatically individual revitalization actions."[3]

Urban projects are commissioned by the administration for clearly defined areas, although massive financing is quite unlikely. On the other side, owners are not that often actively engaged during the refurbishment process, due to their social status (they change apartments rather often, or they rent them out to third parties so that apartments become money-spinning investments). Therefore, Magic Blocks strategy follows three basic directions:

> "Focus on a minimum of essential interventions" (some operations must be connected by other operations underway like improvement of traffic or green areas) (Ghenciulescu, Goagea, Vökler, 2009:53);
> "Generating income by renting legal parking lots and by collecting taxes from those who use certain spaces such as restaurant terraces etc" (ibid.);
> "Increase awareness as to the unquantifiable income resulting from the increased appetite for this area […] and the generation of new activities etc" (ibid.).
Adapting these principles to other cities in Romania and East European countries could be truly relevant for future studies[4].
In such cases, the minimal intervention, or "urban-acupuncture", can create different social areas, organize urban space, suggest multiple uses, separate pedestrian areas from car-related areas, create pockets of smaller green areas, eliminate the small fences, gather together different social and age groups (skaters, rollers, basketball-lovers, grandparents, teenagers in love, yuppies etc). It is economical and easy to implement.
In fact, it is a form of contextualism: different spaces means different approaches. A carefully observing of a certain place within a give period of time becomes the base to make them change course to the better. And, most important, minimum of precise interventions can bring major benefits.

We have found similarities with other European practices in Spain, Bulgaria, Serbia and Hungary:

> In Spain, for example, Estonesunsolar ("this-is-not-a-plot") proposes temporary interventions on vacant borderline plots in the historical centre of Zaragoza, using minimal budgets, based on participatory initiatives, socially motivated[5]. The concept behind this initiative relies in the surveys on the urban tissue, including the identification of dilapidated areas with a major potential for reactivating urban life. This potential does not need expensive interventions or "heroic" cleaning architectural gestures, but rather a dedicated activism to intelligent dwelling, new content and the imagination of the locals. We then talk about a different kind of look on some ordinary and apparently residual places, which may be connected to a wider concept of recycling spaces in the urban and symbolic economy of the city.
> In Bulgaria, the Transformatori Association improves the yard of "St. Constantine" Social and Youth Center in Sofia with painted interventions and smart drawings on the asphalt, to stimulate social interaction and sport activities[6]; at Sofia Architecture Week 2011, this group, together with Javier Pena, improved a dark underpass, using very limited materials an a low-cut budget[7]. Painting the pavement by a couple of volunteers or arranging spontaneous installations to sort out a temporary issue in the city may lead to deeper rethinking of collective ways of relationship to the public space. Changing the reality turn into a key concept of Transformatori group; it implies taking a responsibility, articulated thinking, understanding through critical interpretation, participation through social commitment and spatial transformation through minimal and reversible means.
> In Hungary, Trafik Kör Contemporary Art Association rehabilitated a tobacco-shop from the Socialist era, in the small town of Dabas, transforming it into a cultural mini-building and improving the public space around; they also organized in 2011 the "Architectural Launch in Dabas" proposing a small installation called the "Black Box", a hint to local modernist buildings in the 60s and 70s[8]. That non-profit organization understood that the architecture practice needs to be animated by a responsible cultural activism and regaining professional credibility. The micro-community becomes the basic concept of the initiatives of this organization: small social groups are supported to express their cultural identity and independence to a political and administrative centre managing from "top to bottom." The spontaneity of local events – such as the concept of a "cultural" picnic applied by Trafik Kör – transcends pompous organizations "from the centre", which have a low degree of permeability in marginal areas (small towns such as Dabas in Hungary).
> In Belgrade, a group of students from the Faculty of Architecture of Belgrade University coordinated by Ivan Kucina applied a special method of participative design for Peti Park to transform the autocratic process of creating and managing public space into a platform for discussion between institutions, citizens, investors and professionals[9]. The key concepts are: resistance, defence, self-organization, civic awareness, sustainability, participation. The intervention methodology implied the organization of workgroups, questionnaires, activism, debate platforms, applying the consensus spatially and the economy of means. Therefore, specific architectural interventions are validated by a complex negotiation of diverging interests of main urban actors: municipality, locals and architects. And the benefit is in favour of the locals and the city, not in that of the plungers.
All these examples of emergent practices and "self invented projects", animated by voluntary initiatives, suggest a new paradigm of thinking-and-action, connecting urbanism with architecture and design. They stand for a new type of action-taking or activism in the urban realm, searching for community involvement, and for this reason are welcome[10].

Caciuc Cosmin
University of Architecture and Urbanism Bucarest, Romania.

Notes

[1] "Magic Blocks – Scenarios for socialist collective housing estates in Bucharest" by Archis Interventions, Zeppelin and Point 4. Partners: ATU, Space Syntax Romania, Hackenbroich Architekten, Platforma 9,81.

[2] "Behind the Concrete Curtain – Activation of the central urban areas behind the socialist housing blocks along the boulevards in Bucharest" by Zeppelin Association (Goagea C., Ghenciulescu S., Goagea C-tin), Point 4 (Baroncea J., Popescu C.), Archis Interventions/SEE (Vöckler K.), Hackenbroich Architekten (Hackenbroich W.). Workshop, March 27-29, 2010. A short version of this study was published in Urban Report Team, "Urban Report" n. 3, 2011: 23-29, <www.urbanreport.ro>.

[3] Magic Blocks Team, "Activating the Downtown", in Ghenciulescu, Goagea, Vökler, 2009: 51.

[4] "Similiarites abound: a stock of dwellings that where entirely privatized, autistic individual actions versus general decay, an almost inexistent public space. […] Yet decaying neighborhoods, loss or privatization of public space and difficulties in fostering a communal spirit are by no means the the exclusive domain of eastern Europe." (Ghenciulescu, Goagea, Vökler, 2009:111).

[5] "In 2009, within the framework of the National Program for Jobs, a project was started through which fifty employees were to clean up the empty abandoned plots from the historic centre. Taking advantage of this opportunity, the architects persuaded the local authorities of the necessity to fit out some of such spaces temporarily and use them for various purposes. That was done through the agency of the Vivenda Municipal Society from Zaragoza that 'adopted' the initiative. This is how the Estonoesunsolar program was born. […] The originality of the program is given by the temporariness of the terms' usage. In fact, the city does not conquer such places as public ones; the new functions set in only for a limited amount of time. The advantages of this urban planning approach are given both by the bureaucratic process (thus, simplified) and the chance of experimenting new solutions, which is smoothened by the reversibility of interventions." (Popescu, 2010-2011: 99).

[6] Delova, I., *Concordia Center Yard*, in "Urban Report" n. 3, 2011: 84-85.

[7] Gyurov, V., *Tuning SOFIA Workshop by Transformatori & Javier Pena at Sofia Architecture Week 2011*, in Urban Report n. 3, 2011: 78-79.

[8] Trafik Association, T*rafik – Contemporary Art Point*, Dabas, Hungary, in "Urban Report" n. 3, 2011: 90-91 and in "Zeppelin" n. 101, Feb. 2012: 84-85.

[9] Kucina, I., *The Participatory Project for Peti Park*, in "Urban Report" n. 3, 2011: 70-73.

[10] "When there are no private clients or authorities as clients, one could invent projects. We are speaking of a practice which makes space for itself, finding resources and funding on its own. Either arts projects or based on carrying out an event naturally, they are aimed at saving certain things, or try to decode the beautiful where no one sees it, or try to support the public spaces which need to be reconverted as spaces of interaction and communication. Rather small, temporary, fragile, their multiplication and the energy they spread already build on a hope that something changes for the better" (Goagea, 2011: 3).

Bibliography

Ghenciulescu S., Goagea C., Vökler K. eds, *Magic Blocks – Scenarios for socialist collective housing estates in Bucharest*, Zeppelin, Bucharest, 2009.

Goagea C., *The Pioneers of Emerging Practices*, in "Urban Report" n. 3, 2011: 2-3, <www.urbanreport.ro>.

Magic Blocks Team, *Behind the Concrete Curtain*, in "Arhitectura / Zeppelin" n. 90, Dec. 2010- Jan. 2011, Bucharest, 82-95.

Popescu, C., *Public Spaces Due to Expire*, in "Arhitectura / Zeppelin" n. 90 Dec. 2010- Jan. 2011, Bucharest, 96-101.

Urban Report Team, "Urban Report" n. 1-3, 2010-2011, Zeppelin, Bucharest, <www.urbanreport.ro>.

Zeppelin Association (Goagea C., Ghenciulescu S., Goagea C-tin), Point 4 (Baroncea J., Popescu C.), Archis Interventions/SEE (Vöckler K.), Hackenbroich Architekten (Hackenbroich W.), "Behind the Concrete Curtain – Activation of the central urban areas behind the socialist housing blocks along the boulevards in Bucharest", Workshop, Bucharest, March 27-29, 2010.

Legend

Photo credits: Daniel Constantinescu, Dragos Lumpan, Project Team

[il. 1]
Section-diagrams: before and after intervention

[il. 2]
Situation plan with all interventions marked in red

[il. 3]
"A passage between two worlds"

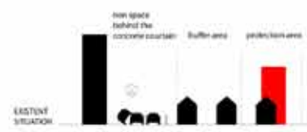
[il. 4], [il. 5]
"A place for the community"

[il. 6]
"Please step on the grass"

[il. 7]
"An urban living-room"

1

2



3

4

5

6

7

Francesco Costanzo
Università "Federico II" Napoli, Italy

Redefining modern housing settlements. The hypothesis of "adequate discontinuity"

Premise

This contribution reflects on regeneration's interventions on the last discontinuity experience following modernist urban canons: huge public residential architectures isolated in nature that make public settlements realized in 60s-80s of the twentieth century.
In Europe, deep social contradictions happened in these settlements are linked, for public eye, with setting of urban and architectural project. In this way started a very lively debate about European modernist experience value. The discussion, often rhetorical and ideological, focuses on the premises of these projects: architectural scale, architectures and open space dis-measure (big size, out of proportion), mono-typological choice. In general this critic involves consequently discontinuity conditions and in this way denies premises of the modern - the isolation of buildings, the land value - which represent the great advances in urban culture and the main contribution given from Twentieth Century to renewal of idea of the city. The ongoing critical opposition appears a historical retreat to hypothesis following nineteenth-century ideas, as morphological continuity.
It is known that the specialist literature, referring to possible intervention strategies, assumes two conventional categories such as densification of discontinuity and rarefaction of continuum. These categories recognize the importance of density. Here it highlights a different way to approach the theme of discontinuity. We don't discuss about value of discontinuity in these neighborhoods and we propose an "adequate discontinuity" concerning not only the theme of density and connections. A manifesto that recognizes the real value of existing architecture and answers and hinders nostalgic trend, romantic and regressive, that proposes the idea of "small village".

The testimonial value of settlements

Considering a specific domain - the intervention on planned neighborhoods of the '60s and '80s –
a first premise is about the need to recognize the unique and indispensable value of some architectures composing more interesting neighborhoods, a testimonial value of historical conditions that still have some living components to be reactivated in contemporary city evolution. In this sense, some of the main issues are the expression of housing in its collective dimension and recognition of this dimension.
We must admit the undeniable urgency of adapting these settlements to new housing needs (security, typological mix, control of open space). These needs tend to a balance between the individual and collective dimensions. It is clear that interventions tend to "fulfillment" of these neighborhoods.
The hypothesis of "adequate discontinuity" provides this "fulfillment" configuring architectural programs that act on issues of density (of uses and spaces) and proximity (of actions and connections). This programs start from specific identity value of these neighborhoods and develop themselves in reinforcement-exaltation of settlements formal structure.

Urban discontinuity and modeling trend

The hypothesis of urban discontinuity induced, as modern practice, a modeling approach privileging the general assumptions, through experiences related to the paradigm of Le Corbusier's Ville Radieuse..
During past times, also after pre-war period, when the assertion of new settlement principles was necessary (for example in case of German Siedlungen), the trend to build repeatable and object models with a demonstrative character, represented an important limit: substantial ineffectiveness to relate to changes determined during the Twentieth Century. This limit, as written by Manuel de Solà-Morales[1], appeared when typological approach and object condition of architectures induced the abandonment of a figurative world in which architects could individuate ways and forms for contemporary city.

A renunciation to define some solutions modulating plans from a strictly abstract and object level to a concrete and rich level, made necessary revisiting operations on built models not related to materiality and reality. This great rethink can be defined "adjustment" of rarefied and discontinuous urban structure in contradiction with discontinuity hypothesis. The *infill* technique represents an example of this principle. It, in agreement with *Mischbebauung* necessity, works on filling and saturation of available spaces assuming as premises densification and rarefied space occupation. These ways bring into crisis a foundational principle and replace it with weak principle.

After the Second World War, architects approached the evaluation of modern project limits and the "temperament" of its radical character (as assertive and demonstrative project). They started a discussion that produced Italian architectural neorealism and a debate within CIAM congresses in the 50s.
The research about modern project modulation produced different outcomes in different Countries and in Italy it was characterized by coexistence of discontinuity and continuity. This dialectic was influenced by Tuscolano example realized by Libera in 1950. This settlement is built on the coexistence of horizontal housing unit, with "low pitch", and linear multilevel building. We can also remember Figini and Pollini's settlement in Dessiè Street in Milan (1951-55) – neighbourhood detached from consolidated city - in which nine linear buildings define insulae composed by little houses (R and S houses). This project is influenced by compositive solutions, focusing on re-definition of new settlements' character, contained for example in Pendrecht's[2] plan (Rotterdam, 1949). We must underline the "Italian way": in Dessiè street neighbourhood, transition between big linear buildings and ground level isn't produced by smaller linear buildings – proposing a discontinuous but denser order – but it is guaranteed by a continuous texture of little houses expressing attention for urban morphology.

Permanence and impatience for architectural concentration

In Europe during the second part of Twentieth Century, with different politic, socio-economic and cultural premises, we can recognize the persistence of "architectural concentration" theme – few significant buildings occupy huge open spaces – declined in representative settlements of urban utopia. These urban projects express "new size" and "huge size"(for example mega structural hypotheses) and they are for example Falchera (Astengo team) in Torino realized during first period of INA-Casa plans, Bijlmermeer in Amsterdam (Nassuth team, from 1963), Corviale in Rome (Fiorentino team, 1973).

This family composed by various projects, that characterized European urban expansions, is today object of reflection and intervention. These places appear inadequate to programmatic contemporary needs: size and typological needs (different size of apartments, typological variety), security needs (control systems for open spaces and connective spaces), management needs (maintenance of open spaces and buildings), connective needs (increasing of links). Cultural issues criticise premises and outcomes and display intolerance for excessive concentration and big architectural size, for obsessive repetition, for open space dis-measure. This intolerance can be linked with the end of social solidarity told by sociologists[3] and shown in utopic projects.

In the last twenty years new conditions solicitation induced adjustment intervention about urban structure constitution and architectural artefact. In the first case, interventions go towards alteration of rarefied constitution using proceedings concerning with densification and adaptation to material situation and concrete morphologies of places (through projects that design ground level and through relationship architectures). They are hypotheses working on infill techniques applied on building textures and big voids. These projects, also in most interesting cases like Koolhaas Bijlmermeer project of 1986, demonstrate important limitations in relationship with definition of an adequate character for urban parts. Instead, at architectural scale, designers done permutation operations, with different outcomes – from superficial *maquillage* interventions to structural interventions (bearing on compositive architectural nucleus) – and they tried to cut off assertive and unitary character of artefact translating and exalting programmatic variety. Here, the project adaptability, as Jean-Louis Cohen[4] underlines, not through "openness of involved landscapes materiality" but through richness of combinational equipments exhibited.

New role of ex suburbs

We tried to highlight that the contemporary reflection about planned neighbourhoods densification called into question the conditions of architectural concentration and spatial dis-measure, expressing discontinuity and meet modern foundational principles. These conditions contain a living force verifiable considering the new role of these neighbourhoods in huge urban dynamic.
In fact, beyond the most evident critical situations and functional problems, the new role of these settlements in contemporary urban dynamic solicits interventions on these places. Neighbourhoods, conceived as suburbs, were the vanguard stations of the city and their marginal positions made them experimentation fields for urban and architectural composition. City evolution of the last thirty years made planned settlements more baricentric, and changed reference horizon – countryside – and their role as unique dialectic pole in relationship with consolidated city. This evolution is remarkable if we consider the original spatial conditions of these settlements. We can compare for example Pilastro neighbourhood isolation in Bologna's countryside with contemporary urban situation. Today this settlements are crossed and surrounded by a complex system of networks and building masses, complexity also regarding social dimension that they must express. In these changed conditions, the planned parts of urban structures appear today absolutely inadequate.
We must say, at this point, that observing city expansion over suburbs, we note that settlements abandoned discontinuous idea to build big voids architectures and big voids for big architectures or big repetitions. Designers adopted dense space occupation models. These models repeat short buildings aspiring to a rhetorical "human scale".
This situation leads us to rethink new role of suburbs considering urban discontinuity as a fundamental value for identity research in huge and complex contemporary city.

A design proposal for Tor Bella Monaca

Considerations about re-definition of settlements character in relationship with their role in urban evolution process, found an application in design proposal for Tor Bella Monaca neighbourhood (TBM) in oriental Rome suburb, designed and realized during 80's of Twentieth Century.
This project was developed by some Architectural and Urban Design Departments of Italian Architecture Schools[5].
The set of design proposals assumes an "alternative" character, because interprets strong scientific and academic reaction to decision, adopted by City of Rome, to support picturesque project by Leòn Krier which provides almost complete substitution of neighbourhood.

A short descriptive intro for TBM appears necessary. TBM was built on repetition of its formal elements and on the proposition of tower buildings and some large linear architecture following an idea of rarefied city. These architectures are isolated artefacts in generous and dominant open condition of urban space.
TBM system was defined by Piero Barucci, a member of design team , as a voluntary "elementary and rudimental" expression built using a "mature" production process (prefabrication) capable of guaranteeing a fast construction process. TBM destiny was different from other monothematic settlements fortunes. In fact they built, during the years, some equipments, with different outcomes, giving public services to neighbourhood.

Residential parts in TBM made clear strong critical situations, common to planned settlements realized between 60's and 80's: limitations in relationship with ground floors of buildings, with the theme of open space control, with technological obsolescence, with small size of apartments, with security of underground parking areas. The project must answer to these recurring problems in planned residential complex.

Considering material and social decay conditions of the area, at the end of 2010, City of Rome developed the idea, hiding a speculative estate intent, of demolishing and substituting the entire neighbourhoods. Project proposes a fragment of compact city, reproducing – in agreement with a flat interpretation of Camillo Sitte ideas – hypothesis of concluded block. There is the ingenuous assessment for which the quality of life is possible only in contexts of compression, consistence and spatial continuity. A re-proposition of the city of Nineteenth Century with "small village" or turists' park size. It returns to a picturesque conception. This term is today object of revaluation and thinkers tend to extend application field of "picturesque" to experience of different cultural matrix[6].

Within the Architectural and Urban Design Departments' national coordination, Unit Naples 2 developed a proposal for the Northern district and had the opportunity to deal with the emblematic case of the system "R5". "R5", designed by Piero Barucci, is characterized by two elements facing each other: a group of three towers and a big horizontal building with eight levels, which iterates the linear block and follows the trend of a broken line. This second part is, through his snake-shaped articulated figure, a system of open courtyards, alternately opened on the road and on countryside of Tor Bella Monaca. The presence of these large spaces introduced the important theme of formal and functional reorganization of open spaces clearly linked with the question of size.

The compositive possibility for the specific case of linear building is the re-proposition and the reinterpretation of its size and its figure. This possibility can be defined from a critical evaluation of existing architectures figural qualities that represent a value (testimonial or documentary) of a specific urban and architectural experience. In Amsterdam Bijlmermeer case, after the recent completion-densification intervention, the hexagon repetition of plan scheme maintained its strength, its clear evidence and permanence. In case of settlements with a feeble planimetric structure in which individual architectures have an important role, we must work with a more careful interpretation of architectural figure. In TBM case, space characterization is entrusted to artifact and its articulation-figure and not simply to spatial sequences defined by general urban structure. Completion intervention – if it invasively acts on the shape of the open space and on architectural figure – can bring into crisis an original principle. The project premises involve maintenance of figural strength, resolving the theme of courtyard proportion, maintenance of countryside value as a structuring space, excluding *infill* actions that obstruct open space.

These assumptions consider the TBM area as an internal part of the city. If yesterday openings towards surrounding landscape and generous nature represented a conventional opening of suburbs to the non-urban world, now they define the new starting constitution characterizing TBM as an urban-natural system set between the consolidated city and fragmentary city. The urban design materials are formal and spaces' size exceptionality, and visual equipments built by architectural figures.
In this sense, the project for linear artifact R5 starts from consideration of theatrical device activated by courtyards sequence. The courtyards are a theatre facing natural and urban scene, but also facing itself according to an introspective principle that shows unitarily the collective dimension of housing. The design possibility – proposed here - concerns with the intervention on courtyard's space, as a space where happens the transfer of outside landscape. We propose a calibrated frame on the capacity to contain and express simultaneously measures according to the men and measures of nature and urban space. This frame is a "C-shaped" architecture of two levels, slightly suspended above the ground, containing single-family houses. The project tries to realize a sedimentation, an anchor to reality of ground and actions, through an offset of building's figure, that, on the one hand, redefines a new tolerable size of space and, on the other hand, reaffirms - with deliberate redundancy - the figural value.

In conclusion, we can say that working on reinterpretation of open space (measure and shape) and on big architectures figural value, we reaffirm the possibility of urban discontinuous parts, according to a modulated and "adequate discontinuity".

Francesco Costanzo
Università "Federico II" Napoli, Italy

[1] M. de Solà-Morales, *Territori privi di modello*, pp. 254 in AA.VV., *Il centro altrove*, Electa, Milan 1996: "Typological thinking and object vision of building – its complementary paradox – renounce to understand mix of infrastructure and voids, of mass equipments and small houses, of mobility and privacy, as figural field for urban contemporary form".

[2] Pendrecht plan was shown in 1951 by Bakema at Hoddesdon Congress and influenced a lot of urban models of 50s. In particular this plan disposed linear buildings following a "turbine" configuration, that was re-proposed by Figini and Pollini in via Dessiè plan. Cfr. V. Gregotti, G. Marzari, *Luigi Figini e Gino Pollini, opera completa*, Electa, Milano 1996, p.369.

[3] Cfr. the thinking of french sociologist and philosopher Alain Touraine in *Eguaglianza e diversità, I nuovi compiti della democrazia*, Laterza, Roma-Bari, 1997.

[4] J.-L. Cohen, *Per un'architettura discontinua*, in «Casabella» n. 487/8, jan./feb. 1983, pp 52-56.
TBM project is a part of a coordinated work that involves some Architectural and Urban Design Departments of Italian Architecture Schools (Milano, Roma, Napoli 2, Parma, Pescara, Reggio Calabria) from the first months of 2011. Unit of Department of Project Culture - Architecture School "L. Vanvitelli" – Second University of Naples was coordinated by prof. Carlo A. Manzo. Project about building R5 was realized by Francesco Costanzo in collaboration with A. Gallo, N. Pietrantonio, V. Fatigati.

[5] We refer, for example, to research realized by Iñaki Ábalos, teacher and director of Laboratory of Technique and Contemporary Landscape of ETSAM-Madrid, author of Atlas pintoresco, Editorial Gili, Barcelona, 2005. In this work, he links "heterodox mixture of materials and sources" with the idea of picturesque considering some works by Le Corbusier.

Bibliography

(Cohen, 1983) *Per un'architettura discontinua*, in «Casabella» n. 487/8, jan./feb. 1983, pp 52-56.

(De Sola-Morales, 1996) *Territori privi di modello*, pp. 254 in AA.VV., Il centro altrove, Electa, Milan 1996

(Gregotti et al., 1996) *Luigi Figini e Gino Pollini, opera completa*, Electa, Milano 1996, p.369.

(Touraine, 1997) *Eguaglianza e diversità, I nuovi compiti della democrazia*, Laterza, Roma-Bari, 1997.

Legenda

1 – Quartiere in via Dessiè, Milano, 1951-5 (Figini, Pollini, Ponti) – aerial view

2 – Quartiere Pilastro, Bologna, 1962-66 (Santini et al.) - aerial view

3 – Settlement Bijlmermeer, Amsterdam, 1963 (Nassuth et al.) - aerial view

4 – Tor Bella Monaca, Roma, '80s - aerial view

5 – Tor Bella Monaca project R5 (Unità Napoli 2) - plan

6 – Tor Bella Monaca project R5 (Unità Napoli 2) - model

Sylvain De Bleeckere - Sebastiaan Gerards
Hasselt University, Belgium

The convivial housing modus for 'Singletown'

Seen in the light of the second part of the motto of the conference - '*the city is like a big house*' (Alberti) – we observe nowadays that European cities are searching, sometimes desperately, for increasing their quality as liveable places. Confronted with big challenges by ongoing transformation processes, the cities and their inhabitants need to think creatively about new modi of living closely together. Within the framework of this general problem, this paper focuses on the research of new typologies for housing in cities that should be architectural answers about making the cities liveable for the inhabitants in a sustainable way.

1 'Singletown'

In 2008 Droog and KesselsKramer presented their project 'Singletown', at the Architecture Biennale in Venice. They had discovered that living alone had became the norm (Droog & Kesselskramer, 2006). Terms to describe are proliferating almost as fast as the single population itself.

Who are this growing army of 'Singletowners'? They are us.
At several points in our lives, almost all of us will live alone, whether temporarily or permanently. Additionally the urban environment and the number of city dwellers is growing globally. (Burdett, Rode 2007: 8). It is obvious that one of the major parameters of the cities in transformation is the singleness of the inhabitants. Families are no more the mean anthropological structure, as it was in the past, that determine the life of a person.
In this paper we focus on the relevance of that human factor in relation to the ongoing transformation process of the cities. In the same strain of anthropological processes appears the ageing society in Western cities due to the many postwar health campaigns of the democratic governments (Hodgson,1996: 131-152). All those prognostications are, of course always provisional, but one cannot deny that a major human parameter in the cities in transformation is the singleness of the inhabitants. That human parameter is strongly connected with the problem of dwelling. Therefore, housing concepts are important factors in the transformation of cities. In turn, this is important to architects, city planners and designers. The human parameter challenges the architectural discipline, both researches and professionals, to consider how people living alone might be a decisive factor to design the dwelling phenomenon in the transforming cities of today and tomorrow.

This paper focus on the dwelling problem in the transforming cities by tracing out a social vision on the dwelling and housing modi in 'Singletown' in the first part of the paper and by presenting the research on the multigenerational home in the second part. The paper formulates a possible answer to the research question: By which social vision and by which kind of housing typology can the discipline of architecture contribute positively to the transformation process of the cities in the twenty-first century?

2 Two social modi of housing in the cities

2.1 The hotel modus

The hotel modus of housing means that people are living in the same building but without any intention to live together. The architectural togetherness doesn't indicate a social togetherness. In a hotel people are dwellers in the same building, but don't want to connect to each other. The hotel modus can be interpreted from two different perspectives: the modern and the postmodern perspective.

In the modern perspective, architectural modernism assumed the hotel modus by creating and promoting the dwelling typology of the housing block or the apartment block. Ludwig Karl Hilberseimer demonstrated that new typology in its extreme as well as utopian design of Highrise City/Hochhausstadt, Berlin, Perspective View East-West Street (1924). This design is kept at The Art Institute of Chicago. Hilberseimer's CIAM design defines housing as a rational entity of amassing modules of dwelling units. Every dweller gets the same amount of space.
The only allowed difference between the dwellers is the number on their doors in the corridors on the levels. In this design the hotel modus has become a new dwelling utopia that formulated the standard in the Eastern European countries, which came under the regime of the former Soviet Union after World War II.
In his preface to Mumfords study on CIAM and housing, Kenneth Frampton writes: "CIAM failed and with it Team 10, not because of their formalistic or conflicted ideological projections but rather because there was ultimately no ground left upon which to continue any kind of rational discourse" (Frampton, 2000: xv) The ideological narrowness was indeed CIAM's weakness generally, but its conceptual weakness concerned mostly the approach of the housing problem.

The hotel modus can also be exposed in a postmodern perspective. Hotel dwellers correspond in a very literal sense to the postmodern human type of living, identified by Deleuze as 'the nomad type' (Deleuze, 1973: 159-174). He characterises this nomad type firstly as having a postmodern way of thinking.
With Deleuze we can circumscribe postmodern nomad thinking as seeing itself always as temporal and not oriented by any kind of substantial or inflexible referential point.

Seen in a positive way, the nomad type of thinking and living fits to 'the hotel modus'. Anonymity and temporality can be dimensions of a profound feeling of being free to go everywhere, experiencing the planet as one big house to live in. In that same perspective the new nomad can consider the city as its 'big house'.

Here the well-known quote of Alberti takes on a postmodern meaning. Here 'the hotel modus' doesn't articulate itself in a fixed architectural scheme. The postmodern hotel modus is in the first place a mental mode and not an architectural one. But it challenges the architecture discourse and discipline to transcend the modernistic typology of the housing blocks in which dwellers are condemned to live as permanent hotel dwellers

The challenge can be articulated in this way: "Can the postmodern nomad way of living in 'Singletown' be architecturally combined with a transformation process of the city, by developing a new housing modus?" This fundamental question finds its mean rationale in a democratic way of thinking, acting and designing. It assumes the very existence of a democratic society in which every individual enjoys the freedom to come and go.

But the new nomad also has a more dark side. He can develop a blind eye for the historical existence of a democratic society, which is the cornerstone of his nomadic thinking and feeling. This critical, weak point must be considered when shaping a real democratic design for dwelling in the big postmodern hotel that the present-day city has become. The convivial modus of housing in the city can perhaps be one architectural answer to the raised question.

2.2 The convivial modus

Our attention for the convivial modus of housing is inspired by the democratic thinking and action work by Ivan Illich. In the second chapter of his Tools for Conviviality, Convivial Reconstruction, Illich talks about the growing destructive impact of determining tools in the modern, industrial societies on the life of citizens. He suggests: "People need not only to obtain things, they need above all the freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for and about others" (Illich, 1973/1975: 24). He reminds us that in an real democratic society "individuals need tools to move and to dwell" (Illich, 1973/1975: 23). Recently, David Cayley summarised Illich's convivial view sharply up in one sentence: "Illich wanted to defend what was left of people's self-determination, to restore face-to-face conversation in words not predefined by professional counsellors, and to make the expansion of freedom, rather than the growth of services, the criterion of social progress" (Illich/Caley, 2005: 14). Illich considers the implication of the convivial perspective as indispensable "to the survival of a democratic order" (Illich/Caley, 2005: 223).

3 The German 'Mehrgenerationenhaus'

To research the relevance of the convivial perspective to the housing question, we studied the multigenerational home.
It is a concrete realization of what we call the convivial modus of housing. In 2010 we investigated the German Mehrgenerationenhaus (multigenerational home). Our empirical research focused on the three cases: 'Stadthaus statt Haus' in Aachen, 'Karmelkloster' in Bonn and 'Sargfabrik' in Vienna. Focusing on the characteristics and the spatial structure of these multigenerational homes we summarize hereby the results. In the conclusion we define this housing concept as convivial from an architectural perspective and we put it the light of the transforming city.

3.1 Characteristics

The first multigenerational home was built in 1993 (Weber, 2010). Inspired by the project 'Lebensräume für Jung und Alt' in Vogt, the German Government developed a national action program 'Jung und Alt', whereby multigenerational homes were built throughout Germany, based on the living together of multiple generations and mutual aid.
What is striking about the developments of recent years is that the multigenerational homes become larger and larger. More and more households are brought together under one roof.
Due to this enlargement living in a 'Mehrgenerationenhaus' becomes cheaper and cheaper. Currently the multigenerational home is evolving to a housing concept for less wealthy people as well. An additional advantage of the enlargement tendency is the development of a higher variety of common areas. In contrast to the first projects where only a big kitchen, garden, garage or lavatory was used communal, today more and mare is affordable. A sauna, a party room, a roof terrace with beautiful views, a guest room, a park or playground, or even a swimming pool: in cost-sharing formulas, they became all affordable.

The most striking characteristic of the German 'Mehrgenerationenhaus' is its convivial nature. The multigenerational home 'Stadthaus statt Haus' in Aachen makes very clear that living in a multigenerational home is more than just 'having a place to stay'. It represents each German multigenerational house as being a convivial habitat for individuals which are looking for long-term social contacts, indoor support and help, not only for older inhabitants, and also for practical and economic benefit. In this context it is an answer to social isolation, an environmentally harmful consumptive lifestyle and the rising gap between the generations. It is especially that convivial essence by which the multigenerational home differs from the 'hotel modus' of city housing.

The convivial nature of the 'Mehrgenerationenhaus' concretizes itself in its architectural characteristic, visible in its common functions and places. These define the degree of commonality of each multigenerational entity. The multigenerational homes consist of several units: one for each household. These individual units must of course give space for the benefit of the common space, which is the heart of every project. For some parts of the multigenerational home privacy is less important. Regarding to these spaces joint monitoring and shared responsibility are sufficient. Making these spaces common increases the comfort of the community, while each resident has to take care of only one small part of the costs. A lot of things like parking, bike storage, laundry, garbage disposal or energy are eligible for mutual organization. In this way, the fixed costs of living are reduced.

The intergenerational characteristic is also essential for multigenerational homes. The residents show a strong will to work out a system of intergenerational solidarity. Solidarity leads to a better mutual understanding of the needs and expectations of the other generations (Deutsch, 2007). Furthermore, with this new way of living the problem of the aging society is also addressed. Another important characteristic of multigenerational homes is the participation of the residents during the development of the project and the community life. Participation in the context of the multigenerational home means that people choose for active participation in the establishment and maintenance of the common living environment. It is the basis for the generating of a real cohesive group. The participation of each resident can be realized through the organization of joint activities (Fuchs & Orth 2003). The type of those activities depends on the needs and desires of the residents and the extent to which they know each other. The freedom to choose whether a resident wants to participate in common activities or not is a very important aspect. For instance in the multigenerational home in Aachen, 'Stadthaus statt Haus', which counts 19 residents, cooking evenings or yoga classes are organized for all residents and other people in the neighbourhood. By involving others the residents do not only work on a more cohesive neighbourhood, they also give others the chance to get to know a new housing concept.
By doing this they practice their citizenship which reinforces what is called 'the cityness' (Sassen 2007: 276) in a democratic way. This citizenship, the realization of general values in a local context out of a private interest, can be found in multigenerational homes. Citizenship is about feeling and accepting social responsibility. In this sense one could say that living in a multigenerational home is a form of active citizenship, a cornerstone of Illich's concept of a convivial society.

3.2 Designing the 'Mehrgenerationenhaus'

During the process of a group who will become the future residents of a multigenerational home, the architect translates al the needs and desires in relation to their new life into a design.
The core of it is the very complex interweaving of two levels which differ depending on accessibility and responsibility, namely the common space and the private space (Deutsch, 2007).

The common space is the heart of every multigenerational home. Here one can observe a big part of the community life with its convivial nature. Many formal and informal activities for the different generations take place here. For example the residents can talk, relax or cook together. The common space is an essential part of the daily lives of all residents and brings both practical and social advantages. The residents share space and materials and by actually living together they can discover old and new common interests. In principle, all residents have equal access to the common areas. Each resident is free to come and go whenever they want. Conviviality is never forced. The common place is the centre of 'the cultivation of conspiracy' (Illich, 2002: 233-242).

To make the common space affordable the private spaces must be designed smaller and reduced in space. The dwellings themselves are too small to function independently and have their due to the existence of the communal facilities. The private space, the individual dwelling, is only open to a certain group or person. This space is the essential counterpart to the common area. Mostly the dwellings include a bedroom, bathroom and a living room with a small kitchen.

A common objection to co-operative living arrangements is the idea of loss of freedom and privacy. Most people want to be free, not criticized and controlled by others. Indeed, the chances are smaller when they live alone and are aloof from contact with the neighbours. Spared from immediate contacts and with a certain risk that a moment comes when the partner is gone, working life has finished and friends are far away and difficult to reach, freedom becomes a solitary pleasure.

Up to a certain extent, the architecture of a multigenerational home can promote social contact, but also ensure that social contact can be avoided. Neither exclusive privacy, nor mandatory collectivity must be discussed. It is more about simultaneous presence and free choice. Within multigenerational homes the built environment makes sure that both privacy and social contact have a framework. A symbiotic relationship can be developed between the individual accommodation and communal facilities, between individual and community. By carefully handling the privacy of the residents and the transitions from public to private space, the architectural design can increase the sense of conviviality as a binding glow between the various residents of the multigenerational home.

4 The necessity to acknowledge the housing problem in transforming cities

Speaking of "upgrading the city" (Sudjic 2007: 227) the housing problem is mostly considered as a small level that isn't quite relevant to reckon with seriously. In contrast with the huge architectural size of the city as a whole, housing seems to situated

on a very small-scale. On the other hand the search to keep the growing cities liveable places, the concern for the convivial value of city life is primordial. Seen in that light, Illich's remark is relevant to contemplate: "Community in our European tradition is not the outcome of an act of authoritative foundation, nor a gift from nature or the gods, not the result of management, planning, and design, but the consequence of a conspiracy, a deliberate, mutual, somatic, and gratuitous gift to one another" (Illich 2002: 241). This sense of communal 'conspiracy' is under pressure. That's what Ricky Burdett of the Urban Age Project (London/Frankfurt) in connection with the 2012 edition of The Endless City (2012) in a recent interview notes. He sees a strong tendency towards gated communities. According to him, that tendency represents the most negative transforming tendency in the present cities (Tanja Vanhoecke, 2012: 22). Illuminating these facts from the convivial modus of housing in the case of the German 'Mehrgenerationenhaus', housing can put the cities on the pathway to a democratic and liveable future. Today's architectural discourse on cities and housing speaks of "the process of densification" (Hutton 2011: 10-13). In our view the densification process is not the problem as such; it's more how to design it. The convivial modus of housing is not only a clear demonstration of densification; it's more a way to keep the process of densification on a human and liveable scale.

Bibliography

Barsuhn A., *Mehrgenerationenhäuser: Planen und Bauen*, Blottner Fachverlag, Taunstein, 2006.

Cayley D., *The Rivers North of the Future. The Testament of Ivan Illich as told to David Cayley*, House of Anasi Press, Toronto, 2005.

Deutsch D., *Lebensträume kennen kein Alter: Neue Ideen für Das Zusammenleben in der Zukunft*, Krüger Verlag, Frankfurt am Main, 2007.

Droog & Kesselskramer, *S1ngletown*, 2006, via http://www.singletown.org

Feddersen E., Lüdtke, I. (eds.), *Wohnen im Alter: Entwurfsatlas*, Birkhäuser Verlag AG, Basel, 2009.

Fedrowitz M., *Gemeinschaftliches Wohnen in Nordrhein-Westfalen: Beispiele und Wege zur Umsetzung.* Ministerium für Arbeit, Gesundheit und Soziales des Landes Nordrhein-Westfalen Düsseldorf, 2007.

Frampton K., Foreword, in: Eric Mumford, *The ClAM Discourse on Housing, 1928-1960*, MIT Press Cambridge MA., 2000.

Fuchs D., Orth J., *Umzug in ein neues Leben: Wohnalternatieven für die zweite Lebenshälfte*, Kösel-Verlag, München, 2003
.
Illich I., *Tools for Conviviality*. Williams Cotlins, Fontana, Glasgow ,1973/1975.

Illich I., *The Cultivation of Conspiracy*, in: Lee Hoinacki, Carl Mitcham (ed.), *The Challenges of Ivan Illich*, State University of New York Press, New York , NY. , 2002.

Petersen U., *Idee und Praxis gemeinschaftlicher Wohnformen*, in Blonski H. (ed.), *Wohnformen im Alter: Der Praxisberater für die Altenhilfe*, Beltz Verlag, Weinheim, 1997.

Sasson S., *Seeing like a city*, in: Ricky Burdett, Philipp Rode, (ed.) *The Endless City*, Phaidon, London, 2007.

Scherf H., *Grau ist bunt: Was im Alter Möglich ist*, Verlag Herder, Freiburg, 2006.

Schwab A., *Die 68er: Kurzer Sommer – lange Wirkung*, Klartext Verlagsgesellschaft, Frankfurt, 2008.

Sudjic D., *Looking for a new Future*, in: Ricky Burdett, Philipp Rode (ed.), *The Endless City*, Phaidon, London, 2007.

Vanhoecke T., *Urban City Project*. *Interview with Ricky Burdett*, in «Knack Extra» (De vlucht naar de stad/The Flight into the City), n. 2, 2021.

Weber, J., Mehrgenerationenhäuser, 2010 via http://www.mehrgenerationenhaus.de

Alessandra De Cesaris
Università Sapienza Roma, Italy

Strategies for the regeneration of suburban sprawl - Case Studies in Rome

This paper presents the results of the research conducted by the *HousingLab*, the research laboratory that is part of the DIAP - Dipartimento di Architettura e Progetto, at the Sapienza University of Rome. The research focuses on defining strategies and methods for regenerating marginal areas in the sprawling peripheries, with a particular focus on the situation in the city of Rome, according to a perspective that considers both environmental sustainability and the search for new social equilibriums[1].

The regeneration of peripheral areas constitutes a strategic objective for many Italian cities. This may be considered an occasion not only for a work of renovation 'from the interior', but also an opportunity to redesign relationships with context and to define connections at the vast scale, creating a network between these areas of sprawl and the metropolises to which they belong.

The areas of the sprawling periphery are now configured as separate entities, whose characteristics do not correspond with those of the periphery of the modernist city[2]. They possess their own specificity, which requires new instruments of analysis and new strategies of intervention. They are connoted by the absence of an urban structure, by the waste of collective resources and a lack of historical and landscape identity. It is possible, nonetheless, to consider these entities in positive terms, as organisms that evolve and modify to respond to the new requests and needs of a society in rapid transformation.

Conscious of the fact that we can no longer continue consuming new portions of soil, a finite and non-reproducible resource, it is necessary to identify adaptive strategies for the redesign and densification of urbanised soil, unresolved in its use and management, as part of a vision that sees the city growing atop itself and regenerating itself from within. This can be achieved through layering and densification, methods that historically belong to the traditions of the growth and development of the European city. Urban *sprawl*, the dispersion of settlement, is no longer a feasible strategy for the sustainable development of the territory. It consumes a limited resource, which regenerates itself only over great lengths of time, and with elevated costs to society. Furthermore, it increases the costs of urbanisation, of mobility and the pollution produced by private automobiles; it accentuates phenomena of segregation and weakens the sense of belonging to a community[3].

As part of a general reconsideration of the means of regenerating urban peripheries that, in parallel, has also examined the regeneration of post-war social housing estates in Italy (cf. the contribution by Domizia Mandolesi entitled The regeneration of public housing neighbourhoods. The example of Tor Bella Monaca in Rome), the research has identified three priority themes of intervention:
1.the first regards a series of interventions for an innovative variety of infrastructures for the soil and subsoil. This means increasing mobility systems and technological infrastructures as a strategy to better connect these marginal areas with the rest of the city. Moreover, this means rethinking systems of network infrastructures as a new generation system able not only to deliver facilities, but also to provide services and encourage the use of new sources of energy;
2.he second concerns the definition of strategies to redefine the margins between the city and the countryside. The relationship between the urban fabric and the countryside currently necessitates new interpretations; the limits of construction must be redesigned by establishing different levels of mediation between built-up and agricultural areas; thus it is possible to define an edge of varying dimensions and adaptable to different uses;
3.the third concerns residual empty areas inside these peripheral areas, as a starting point to tackling regeneration within a vision that embraces environmental sustainability, the promotion of new social equilibriums and the configuration of a new spatiality able to strengthen the sense of belonging.

1 Rethinking infrastructures

Within the territories of the sprawling city, systems of transport infrastructures have assumed a role of crucial importance; within this disperse and fragmented organism the needs of mobility have only increased. By guaranteeing access to goods and services, and the creation of social relations, they represent an unavoidable condition for economic growth and one of the elements that most strongly characterises contemporary society. All the same, transport infrastructures, designed and conceived to improve living conditions for society by increasing the possibilities and speeds of movement, and thus the freedom and range of actions of the individual, have contributed in a significant manner to the de-qualification of the landscape. As they cross the territory, in reality, they have surrounded themselves – above, below, alongside – with wastelands and abandoned fields. They have created marginal, under- and un-utilised spaces, difficult to access and thus degraded, urbanised only through processes of settlement at the limits of the legal.

Among contemporary infrastructures, the road network with its numerous lanes and intersections with the other grids of the network is, in spatial terms, potentially the most invasive. It is also essential to the life of the city. Over time it has consistently organised territory and constructed urban space.
By connecting more or less distant points – longitudinal connectivity – it organises and structures a cradle of with margins of variable dimensions. A series of elements link to these margins ensuring, or not, transversal connectivity. The spatial and figurative quality of this cradle and its capacity to connect is crucial to the social use of the street.

The endless search for greater speed and more fluid traffic flows, with the intent of defining increasingly more efficient longitudinal connections, resulted in the construction of a series of high speed axes that, enhancing speed, reduced links to the overall network, and thus to transversal connectivity.
The result is an evident detachment of the street from the territories crossed, a detachment that in some cases has created a deep cut within urban systems, the generation of many unresolved spaces and a reduction in, if not the complete cancellation of, the social value of the street.

Today, in the territories of the sprawling city, a series of possibilities are offered by the remodelling of existing road infrastructures, capable of re-integrating technical solutions with the quality of the urban spaces crossed, by working with designs capable of:
- articulating the street section, abandoning the abstraction of typical sections to integrate various functions and restore a social function to the street;
- verifying the possibility to transform intersections that currently resemble black-holes in the urban topography; 'fusing' these intersections into a network system will make it possible to reclaim land for new activities, transforming a road-intersection into a modal exchange intersection;
- investigating the potentials of multi-level infrastructures - three-dimensional elements with their own, evident spatial qualities, reconnecting interrupted local circuits and framing urban patterns;
- aiming at the valorisation of identity-generating, landscape and environmental resources by restoring the value of open space represented by the Roman countryside, currently an 'urban countryside' (creation of urban cultivations, 'urban vineyards' and cultivations for the production of biogas and wastewater wetparks).

However, it is probably within the comprehensive reconsideration of the system of network infrastructures[4], according to a model that integrates the use and production of energy, that we find one of the priority strategic fields for the regeneration of the peripheries and the requalification of contemporary landscapes. Often invisible protagonists, configured as networks of immaterial flows concealed beneath the soil, we are aware of their crucial role only when they cease functioning, when the flows that run inside their conduits, cables and tunnels are interrupted or collapse.

They represent the circulatory system, the support, the substrate on which depends the organisation and structuring of the city, metropolitan territories and, at a vaster scale, entire nations. In the territories of the sprawling city it is legitimate to hypothesise new logics and new forms of integration in the production and management of energy. It is necessary to hypothesise a network system of capable not only of distributing flows of material/energy to be consumed or disposed of, but a system that becomes an active part of the production of these flows. A system designed not only to satisfy increasingly more voracious consumers, using a one-way system of flows, but rather a capillary system suitable to receiving and redistributing energy that is produced. A system fitted with particular nodes capable of transforming by-products (liquid sewage, solid waste, rainwater) and of becoming an active part of the production of required energy[5].

It is a system that most likely requires new models, capable of integrating the production and consumption of energy, the disposal of the by-products created by the urban organism and energy production. Models organised according to hierarchies and administrative schemes that differ from those defined in the past, as part of the works to modernise the nineteenth century city[6].

2 Rethinking margins

The sprawling and fragmented contemporary city requires new interpretations of the relationship between the city and the countryside, capable of establishing various levels of mediation between built space and open space. In this archipelago city, composed of a myriad of different enclaves, the margin between built and void has assumed other connotations and other values with respect to those that historically defined the border between city and countryside[7].

To the margin intended as the clear border between one situation and another, one world and another, it is licit to associate other figures and other interpretations. It may be intended as an element of varying depth, in which the concept of the threshold assumes importance. This variable depth may also accept different uses and functions.

Furthermore, these confines, reformulated in this manner, represent the spaces of possible action in order to reconfigure a new relationship between built and open space, in which to test new spatial conditions with varying quantities of built volume.
In attributing a sense and a use to these confines with their variable depth between built and open space, the research programme suggested a series of possible assets, uses and functions that vary in relation to the different conditions of context. The conviction is that the unique true guarantee of being able to preserve the territory against advancing illegal constructions lies in attributing a use and a function to this limit.
- As part of the hypothesis to redefine a new productive relationship with the countryside, the suggested use is linked primarily to agriculture, with greenhouses, urban gardens and zero-kilometre food stands.
- Landscaping and plantings can be designed with the aim of improving the bioclimatic conditions of settlement (i.e.: barriers of trees that function as windbreaks against cold winter winds, rows of trees capable of channelling cooling summer breezes, the introduction of water for purposes of cooling);
- Proposals have been made for the creation of a series of public spaces of the latest generation, designed to host outdoor events not always able to identify congruous spaces inside the consolidated city, and a network of spaces for sporting and recreational activities, based on a concept of sport intended less an antagonistic pursuit, and more as an activity linked with physical wellbeing and an attention to personal health.
- As part of the hypothesis related to the valorisation, not only economical, but also cultural, of the *Agro romano*, proposals were made for a series of art installations *en plein air*, works of land art and agricultural land art. Spaces and itineraries conceived to integrate the system of historical-archaeological sites present in the Roman countryside, capable of creating new points for the observation and interpretation of the landscape.
- Finally, the hypothesis also includes the reformulation of the relationship between public space and infrastructure, with an integration between a series of *trash* infrastructures, generally pushed to the most marginal peripheries by traditional planning, and the latest generation of public spaces. The hypothesis thus calls for the location of waste disposal facilities and others for the production of alternative energies along opportunely selected margins.

3 Designing in the void

A third question dealt with the strategies to be adopted when intervening in the residual void areas of the sprawling periphery, characterised by low density and a lack of any urban structure. These void areas, together with marginal spaces, constitute an opportunity for redesigning public spaces, services and landscaping. The objective is that of configuring new spatial conditions capable of reinforcing a sense of identity and belonging. The realisation of new services and new housing structures able to respond to the changing needs of dwelling presented by contemporary society and the definition of a system of public spaces is, in fact, a determinant element in the transformation of the 'peripheries into cities'. These actions also permit increases in density that, in addition to the better use of land, must also be viewed in relation to an increase in exchanges and interactions between diverse subjects and the achievement of that critical threshold necessary for the development of economies of agglomeration and the activation of the services so strongly requested today.

To achieve these objectives the research identified two profoundly diverse and highly complementary strategies, both matrixes of new models of dwelling. They are strategies that we feel are capable of triggering processes of participation and the shared acceptance of choices and management by local residents.
- The first is based on the insertion, within the grids of construction, of new and smaller structures, capable of introducing typological innovations and triggering a more virtuous process of regeneration in peripheral areas. A crucial aspect of these micro-operations of substitution and densification will be the reduction in the energy consumed by existing public properties. This is coupled with the opportunities offered by Italy's new Piano Casa housing plan, represented in a series of regulations that vary from region to region. The Plan offers incentives, through a recognition of allowable increases in volume, to projects for the requalification of residential, public and other forms of existing structures.
- The second strategy is characterised by the adoption of strong and recognisable figures, juxtaposed against the anonymity that characterises their surroundings. These strong figures, true urban landmarks, re-propose the complexity of space and the variety of functions characteristic of the urban environment.
Possible schemes were developed based on the overlapping of layers with differing degrees of relations between public and private, and their reciprocal contamination.
This relational scheme was thus assumed as a presupposition to the definition of solutions featuring diverse spatial configurations (closed and open courtyards, linear, simple or complex schemes, etc.) adapted to different contexts.
An initial verification, which we named '*quadras*' because of its shape, was carried out in the eastern sector of Rome along Via Casilina, in a open area between the Villaggio Breda, a working class neighbourhood for employees of the homonymous factory designed in the 1940s, and a settlement of mostly single-family houses verging on the countryside. To verify the methodological validity of the scheme we subsequently tested a second configuration in a marginal suburban area known as Borghesiana, planning a fragmented, formal linear structure in relationship with the extant space.

Alessandra De Cesaris
Università Sapienza Roma, Italy

Notes

[1]The work was developed through an alternation of theoretical considerations and design experiments, as part of the PRIN 2008, entitled *Rigenerazione dei tessuti urbani marginali. Strategie e metodi per uno sviluppo sostenibile. Applicazione ai tessuti della dispersione e agli interventi di edilizia residenziale pubblica. Casi-studio a Roma*; Scientific coordinator G. Neri, unit research coordinator M. Calzolaretti, vice-research coordinator A. De Cesaris and the research of the Ateneo Federato, 2008 entitled *Strategie d'intervento nelle aree della periferia diffusa. Casi studio a Roma. Riqualificazione della edilizia residenziale pubblica, pianificazione dei 'toponimi' e progettazione delle nuove '167'*; Scientific coordinator M. Calzolaretti. A fundamental contribution to the design experiments was provided by the data developed by doctorate researchers participating in the design workshop in Architectural Composition-Architectural Theory (2010-2011) and the solutions elaborated for design competitions; cf. Calzolaretti M., (a cura di), *Molteplice modulare flessibile. Tre progetti per la casa*, Gangemi, Roma, 2009.

[2] cf. Secchi B., 'Orographie de la Città diffusa', in *Tecniques architecture* n. 474, 2004 and Calzolaretti M., 'Strategie per la rigenerazione della periferia diffusa', in Prandi E., (a cura di), *Community/ Architecture Documents from the festival Architettura 5 2009-2010*, Festival Architettura Edizioni, Parma, 2009 pp. 94-101.

[3] In addition to the publication Gibelli M. C., Salzano E., *No sprawl*, Alinea, Firenze, 2006, cf. Ingersoll R., *Sprawltown*, Meltemi, Roma, 2004.

[4] In an attempt to clarify the concept of infrastructure, given the heterogeneous nature of the systems and structures referred to by this terms, P. Edwards has wagered that perhaps the best definition of infrastructure is a definition in the negative: infrastructure is that collection of systems without which contemporary society could not function, in: Edwards P.N., 'Infrastructure and Modernity', in Misa T.J., Brey P., Feenberg A., (eds.), *Modernity and Technology*, Cambridge MA: MIT Press, 2003, p. 187.

[5] Bélanger P.,'Redefining Infrastructure', in M. Mostafavi, Harvard University, Graduate School of Design *Ecological Urbanism*, Lars Muller Publishers, 2010, p. 332-349.

[6] Barcelona has entrusted the realisation of the latest generation of infrastructural network – considered one of the key elements to the true future competitiveness of the new district – with a central role in the urban transformation of Poblenou; cf. *Il plan especial d'infrastructures del Poblenou*. In addition to the rationalisation and implementation of the system of electrical energy networks, fibre optics, water supply and Wi-Fi, the system also includes wells to capture phreatic water used for street cleaning and irrigation. The project also includes a pneumatic waste disposal system, with three collection centres.

[7] Regarding this issue cf. Fleischer A., 'Les Lisières', in Nouvel J., Dutheilleul J.M., Cantal-Dupart M., *Naissance et renaissances de mille et un bonheurs parisiens*, Mont-Boron, Paris, 2009, pp. 144-147; Desvigne M., 'Épaissir les lisières', in Nouvel J., Dutheilleul J.M., Cantal-Dupart M., op. cit. pp. 148-154; and the proposals made by LIN (Finn Geipel +Giulia Andi) for the Grand Pari(s) consultation, in Geipel F., Andi G., *Grand Paris. Metropole Douce. Hypotheses sur le paysage Post Kyoto*, Jean-Michel Place, Paris, 2009.

Bibliography

Aymonino A., Mosco V. P., *Spazi pubblici contemporanei. Architettura a volume zero*, Skira, Milano, 2006.

Bélanger P., *Redefining Infrastructure*, in Mostafavi M., Harvard University, Graduate School of Design *Ecological Urbanism*, Lars Muller Publishers, 2010.
Bellicini L., Ingersoll R., *Periferia Italiana*, Meltemi, Roma, 2001.

Bossalino F., Cotti A. (a cura di), *Roma anni Novanta. L'edilizia residenziale pubblica e la nuova forma della città*, Sapere 2000, Roma, 1992.

Calzolaretti M., (a cura di), *Le trasformazioni della residenza urbana*, in «Rassegna di Architettura e Urbanistica» n. 132, 2010.

Calzolaretti M., (a cura di), *Abitare in città. Questioni architettoniche, sociali, ambientali*, Gangemi, Roma 2006.

Calzolaretti M., (a cura di), *Molteplice modulare flessibile. Tre progetti per la casa*, Gangemi, Roma, 2009.

DASH Delft Architectural Studies on Housing, *New Open Space in Housing Ensembles*, NaiPublishers, 2009

De Cesaris A., (a cura di), *Infrastrutture e paesaggio urbano 2* ,in «l'industria delle costruzioni» n 408, 2009.

De Cesaris A., *Infrastrutture e paesaggio urbano*, Edistampa, Roma, 2004.

De Cesaris A., *Riuso come modalità di reinvenzione del paesaggio urbano*, in « l'industria delle costruzioni» n. 373, 2003.

De Cesaris A., *Lo spessore del suolo parte di città. La costruzione del sottosuolo condizione contemporanea dell'abitare la città*, Palombi, Roma, 2002.

Dierna S., Orlandi F., *Buone pratiche per il quartiere ecologico. Linee guida di progettazione sostenibile nella città della trasformazione*, Alinea, Firenze, 2005.

Edwards P. N., *Infrastructure and Modernity*, in Misa T. J., Brey P., Feenberg A., (edited by), *Modernity and Technology*, Cambridge MA, MIT Press, 2003.

Gasparrini C., *Passeggeri e viaggiatori*, Meltemi, Roma 2003.

Gibelli M.C., Salzano E., (a cura di), *No Sprawl*, Alinea, Firenze 2006.

Haydn F., Temel R., *Temporary Urban Spaces. Concepts for the use of City Spaces*, Birkhauser, Basel, 2006.

Houben F., Calabrese L. M., *Mobility: a room with a View*, Nai Publishers, Rotterdam 2003.

Mandolesi D., La rigenerazione dei quartieri residenziali nei contesti europei, in «Rassegna di Architettura e Urbanistica» n.132, 2010.

Mandolesi D., *Abitare le infrastrutture*, in Secchi R., (a cura di), *Future GRA*, Prospettive Edizioni, Roma, 2010.

Palazzo A. L., *Campagne urbane paesaggi in trasformazione nell'area romana*, Gangemi, Roma, 2005.

Secchi R., (a cura di), *Future GRA, Il futuro del grande Raccordo Anulare nella prospettiva della città contemporanea*, Prospettive, Roma 2010.

Secchi B., Viganò., *La ville poreuse. Un projet pour le grand Paris et la metropole de l'après-Kyoto*, Metis Presses, Lavis, 2011.

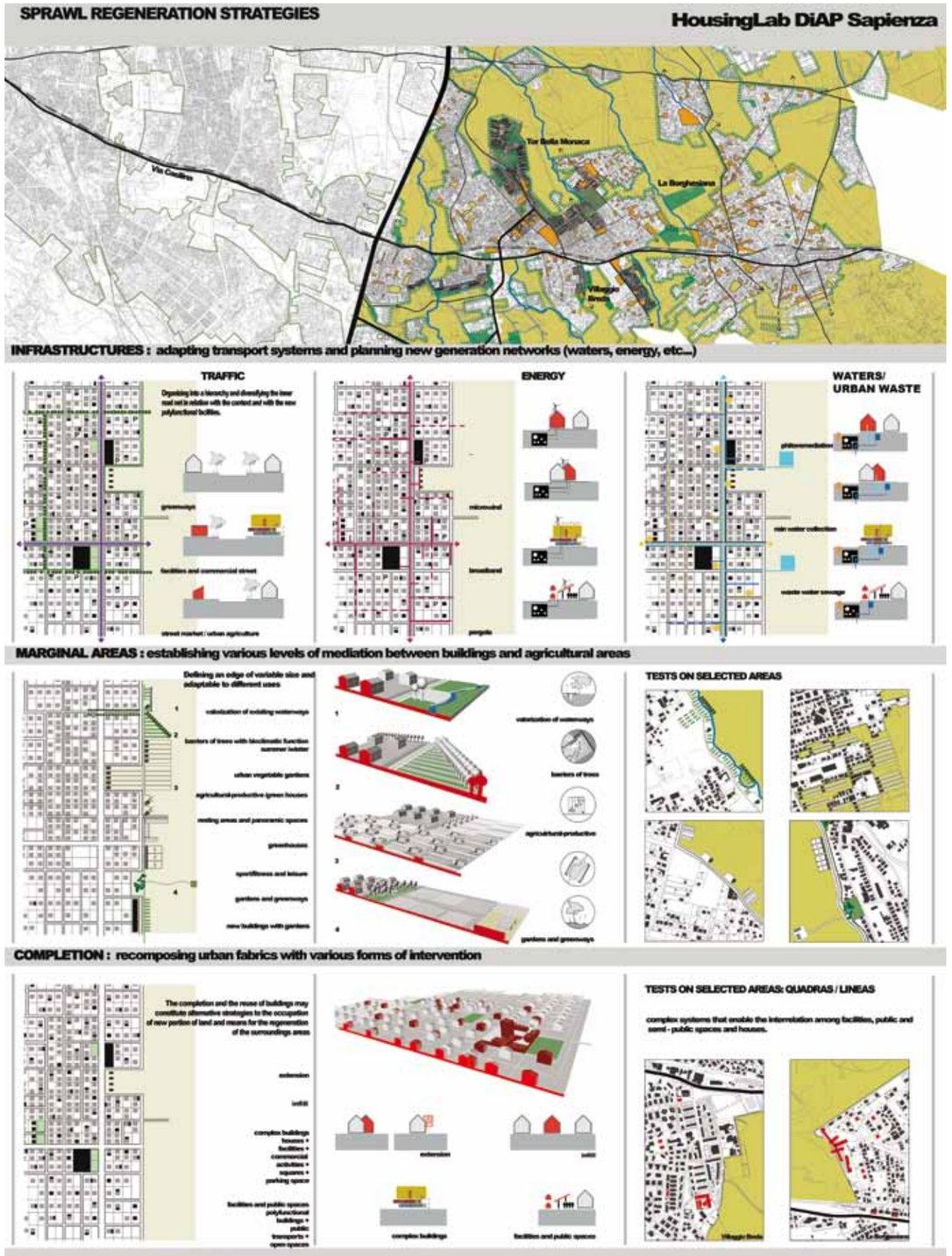
Shannon K., Smets M., *The Landscape of contemporary infrastructure*, Nai Publishers, Rotterdam 2010.

Smets M., *Il nuovo paesaggio delle infrastrutture in Europa*, in «Lotus» n. 110, 2001.

Legenda

Strategies to regenerate suburban sprawl, HousingLab, research group: M. Calzolaretti, A. De Cesaris, D. Mandolesi, M. Aprile, con L. De Vincenti, A. Felici, M. Macera, B. Raffaelli, C. Acosta Fontana, E. Ravà, S. Vacca Maggiolini.

1 Study area along via Casilina in Rome, between GRA and the municipal boundary
2 Rethinking Infrastructures
3 Rethinking margins
4 Designing in the void



Catherine Daisy Gomes - Farida Nilufar
Bangladesh University of Engineering and Technology (BUET), Bangladesh

Understanding Privacy in Domestic Space: A Study of transformation of Urban Houses in the context of Dhaka.

1.0 Introduction:

Houses carry cultural information in their material form and space configuration [Hanson J 1998; Oliver P1987; Lawrence 1993:73-80] and the relationship of gender and its social connotation as a cultural factor has an imprint on the morphology of house form. While emphasizing on socio cultural factors as the primary forces in determining house form, Rapoport [1969:60-68] finds gender considerations such as position of women and their privacy as the key determining factors of house form.
The gender issue along with privacy of women in domestic environment has been given importance on the domestic spatial organisation of the urban houses of Dhaka from its genesis period. In the context of Dhaka the urban house form generated from the rural pattern and the morphology has been transformed gradually with time and social change. The initial house form followed an introvert arrangement around courtyards [Imamuddin, 1982; Hafiz, 2011] that supported the socio-cultural and religious norms ensuring privacy of the domestic space with segregation of male and female zones.
Dhaka, the capital of Bangladesh, has a political and administrative history since 13th (from1204-1576) century with the pre Mughal period as a prominent market centre [Rob and Asaduzzaman,1997].The Europeans left their mark on the house form along with other societal changes from1576 and when Dhaka became the capital of the province of the East Bengal in 1906 it resulted with a spectacular development when it came out of the historical core and expanded towards the northern part as a new city [Nilufar, 2011:187-210]. Since then and especially after the independence of Bangladesh in 1971 Dhaka has been regarded as one of the fastest growing cities and at present the city accommodates more than 12 million inhabitants [Hafiz, 2011]. The change that occurred in the last twenty years in Dhaka city is the growth of population with a consequent reflection on the house form. The recent developers in Dhaka city, who are the providers of the contemporary apartments to the middle income people, design very compact apartments keeping in their mind about the affordability of their target group. While doing this, the desired privacy created by the sequence of spaces and segregation of zones is becoming different from the traditional one.
This paper focuses on the transformation of the urban house form in the context of Dhaka in relation to gender aspect. Space syntax method is used to analyse the houses in order to investigate the interaction between privacy in domestic space and transformation of urban house. Justified graph and Visibility graph analysis is conducted on representative cases to trace the transformation of urban house form and find out its relation with respect to privacy of women users.

2.0 Spatial organization of the urban houses of Dhaka and its transformation

The morphology of the urban house form is the result of various urban forces generated at different phases of growth of the city. The evolution of the urban houses of Dhaka can be traced back to 13th century with the pre Mughal period. Since then courtyards were found as an inseparable an essential element in the design and construction of urban houses in Bangladesh [Hafiz, 2011: 65-86]. The cultural foundation has established the *Introvert courtyard pattern* in the context of Dhaka from the very beginning, which had its root in the rural pattern. The introvert courtyard type houses are common in historical house layouts [Schoneaur, 1981]. In the indigenous urban houses of Dhaka the inner court served private family purposes. This Courtyard was the central space of all activities and it acted as the threshold transient semi-public space between the habitable rooms [the private territory] and the living room [the public territory]. Traditional Bengali house was organized with the concept of 'back and front'. The street facing front side acted as the public side, receiving guests and restricting them to a limited area. The male activities were located at this outer zone. The back of the house is associated with service facilities and female areas are located in this zone. The female household members were mostly kept confined within the boundaries of the house where the courtyard was their breathing space and their universe [King A.D.1984].
The Extrovert bungalow type house forms in the colonial period, since 1576, relates with the European styles more. These buildings were free standing, courtyard less, outward facing having detached service structure at the back. Service remained isolated from the main mass, connected by a stair. Kitchen, toilets were separated from the main house. Besides this extrovert bungalow type another type of house form evolved in Dhaka in the houses of the affluent people of the society with a tendency to build a house that had a European facade treatment but a local courtyard type layout. Here the local courtyard type plan is blended with the European extrovert type Bungalow pattern.
Urban houses in the post colonial period [after 1757] formed an integration of living and service parts of the house into a single mass as *Consolidated type* and it became the model for the later mass housing. Single family houses in individual plots followed this consolidation and later was arranged in different levels tied with a staircase as vertical circulation. The common feature about these residential buildings is that they are all accommodated in multi-storied walk-up blocks with each staircase serving two units. Houses became separated into three distinct zones-Formal, Informal and Service zones. In The internal arrangements of spaces, a high degree of compartmentalization is found and a corridor like space runs through the centre. In some cases corridor transferred into a fat linking space, which usually was used as a dining or family living space.
The population increase of the city led the multi storied *Compact Apartments* to meet the housing demand. The housing societies and developers became the supplier of the multistoried housing stock to various groups of people. About two decades back the city dwellers were reluctant to live in flats but this situation has changed within the last ten years [Hossain A, 2010].In 1980s a large acceptance of the concept of living in flats were seen although Real estate business started in late 1970s. Compact space arrangements resulted in smaller rooms in the multi-storied apartments for scarcity of space. Flats were arranged about the staircase and lift core serving the units. Due to compact layout, dining acts as a connecting space of all the adjacent spaces.
The urban house forms of Dhaka has been transformed gradually from introvert courtyard type to extrovert type houses in the Colonial period and consolidated types in the post colonial period and in the contemporary period to compact apartment types which are found to be different from the traditional pattern with respect to socio-cultural aspect.

3.0 Privacy in Domestic Space in the context of Dhaka

'Privacy is one particular social aspect which relate to different forms of dwellings and social life' [Lidia S 1981:89-111]. Privacy of the household members has been often discussed as a basic ingredient of domestic space emphasized by segregation of private and public spaces in a house. This private-public territory, as one of the binary codes followed in the organization of domestic space, is governed culturally [Lawrence, 1987; Goffman, 1959]. The denotation of 'public' and 'private' implied that some form of spatial pattern accompanied the separation of women and men into different activities. This supported the concept of 'gendered space' which originates from a private-public separation model and confines women within the private domain of a house in performing the domestic works and secluding from outside public realm [Rendell J, 2000:103; Ghafur S]. Every culture defines its own privacy [Altman, 1980:155] and it differs among cultures. In Bangladesh majority of the population belongs to Islam religion, which acts as a determinant in the domestic space arrangement as any Muslim societies in the world [Zako R, 2006] where the system of 'purdah' was developed to keep women secluded in the home. In a Muslim society man has full responsibility for the maintenance of wife and children [Monsoor T: 532]. In the socio-cultural context of Bangladesh, privacy is an important factor and is attained with the separation of male and female zone. Imamuddin [1982], one of the early researchers of urban houses in Dhaka, Bangladesh, has shown that the zones in houses are created in consideration to privacy. The degree of privacy of the house refers to the degree of privacy of the female members of the family in this social context. Traditional houses of Bangladesh were arranged in sequence respecting the activity patterns of the female members of the household and female zones were placed at the deeper zone and approached from the courtyard. Privacy of the female members, guided the domestic spatial organization with a control of visibility of inner spaces from public areas and restriction of access of the visitors.

4.0 Space Syntax: a Theory and Method for house form analysis

The Space Syntax theory, developed by Hillier and Hanson, helps to bridge the gap between the architectural analysis and the cultural interpretation. The morphological characteristics of a plan layout are analyzed with the help of graphs called "justified access graphs" [Hillier and Hanson, 1988]. In space syntax, to measure and evaluate configuration, first, the justified format of the access graph is drawn. In these graphs, all spaces of the house are appointed depth values according to a chosen space called "the carrier." After the graphs are formed the analysis shows that some numeric measurements related to the properties of spatial configuration can be made. Among these Depth (D) and real relative asymmetry (RRA) values [The inverse value of integration] helps to explain the spatial aspects of domestic space quantitatively. These properties have a significant role in detecting the privacy level of interior spaces within the house. J graph analysis provides the depth in an organisation of domestic spaces. Integration has emerged in empirical studies as one of the fundamental ways in which houses convey culture through their configurations' [Hanson, 1998]. The degree of 'integration' can be mathematically measured with the help of RRA value, which has been proved to be a powerful tool to explain the social dimension of the house. This value extends from 0 to above 1. A low value indicates that a space tends to integrate the system, and a high value indicates that a space tends to be segregated from the space. A higher mean value of (RRA) indicates greater control over movement and increasing the degree of social hierarchy, which increases privacy [Mustafa, et. al., 2010].
Visibility refers to Visual information provided to the observers at any given location. Visibility graph analyzes [VGA] the extent to which any point in a spatial system is visible from any other. Through this visibility graph analysis we can obtain numerous measures of both local and global spatial properties that seem likely to relate to our perception of the built environment [Turner, et. al., 2001]. The local measure visual control gives us locations that have the maximum visual control, i.e. spaces that might be called controlling. This picks out visually controlling spaces that can see more [Turner, 2003]. Along with visual control of space VGA provides the visually most integrated space in a domestic organisation that relates privacy of the female members in a domestic environment with its visibility aspect.

4.1 Spatial analysis of the house plans in Dhaka

Privacy of the female members in a domestic environment is associated with the visibility aspect of the spaces used by the women. The concept of gendered space relates with the concentration of female members of the house in some particular area and its privacy is related to the visibility of that space from the outsiders/guest's area. Using space syntax tool these qualitative elements "location of gendered space" and its "visibility relationship" from the visitor's zone can be measured quantitatively. J graph analysis provides the depth in an organisation of domestic spaces it marks the depth of female zone with respect to the entry position. Along with controllability of space VGA provides the visually most integrated space in a domestic organisation. These depth and zoning of female members of the family relate with the gendered space concept by locating gender dominated zones in the spatial organisation.
In this paper the privacy of the female members of urban houses in Dhaka were analysed with justified permeability graph and visibility analysis graph on three representative cases from the introvert courtyard type house, extrovert type houses, consolidated houses and contemporary compact apartments collected from secondary sources. Figure 1 shows the plans, j graph, visual control and visual integration of the four representative types .The analysis is shown as below with reference to the values of the graphs provided in table1 and table 2.

•Introvert courtyard type
The introvert courtyard type plans confirm to a deeper [depth 3/4] arrangement. From a comparative study of these three analysis it is seen that the spaces [outhouse/living] used by male members of the family are placed at depth [1] that is close to the exterior and the spaces those are used by women [kitchen, bed, etc] are located at depth [3] that is far from the exterior. Courtyard is placed at the central position at depth [2] that denotes is identity as a threshold between the two zones. The courtyard plays a vital role in terms of integration in the introvert type houses. It is the space having the lowest RRA which explains these spaces as having higher integration. Kitchen, bedrooms/rooms in Introvert courtyard type layout are more segregated having higher RRA value and these spaces are more private in nature. [Table: 1] .In terms of depth a common sequence is as:

Exterior [0]> passage [1]>Outhouse/ living [2]/ Court [2]>Rooms /Kitchen [3]/Toilet Male zone Female zone [from depth 3]

The value of Visual Integration is higher in courtyard states that courtyard is the space which is mostly connected with all other adjacent spaces visibly. Kitchen is the space that has the lowest value of visiual integration[VI] indicating that visual privacy is highest in kitchen. Visual control is higher in the courtyard indicated with red colour in the graph having highest values. [Table: 2]

•Extrovert type houses
In the extrovert type houses of the colonial period the sequence, with respect to depth of spaces, is deep as:

Exterior [0]>Ver/ Out house [1]> Hall [2] >Din/Rooms/Ser court [3]>Kitchen/Ser/Toilet [4] Male zone Female zone [from depth 3]
Service court has the minimum RRA value that indicates these spaces as the most integrated space with less privacy which is connecting kitchen service and toilet[with higher RRA indicating segregation from rest of the system].

The value of Visual Integration is higher in courtyard states that service court is the space which is mostly connected with all other adjacent spaces visibly. Kitchen is the space that has the lowest value of visiual integration[VI]stating that it is segregated visually from the rest .The local measure visual control from the VGA analysis shows that Visual control is higher in the service court which is connecting the female and service zone of the house.

•Consolidated type houses
Corridors, which run through the centre, sometime becomes extended and act as dining space and become the most integrated space with minimum RRA value in this type of houses. The dining room replaces central courtyard where most of the daily activities take place and this is spatially and visually the most integrated space. In terms of depth sequence is as:

Exterior [0] > Corridor [1]> Living / Dining [2] / Rooms/ Kitchen/ toil [3]>Toilet[4]. Male zone Female zone [from depth 3]

The value of Visual Integration is higher in dining states that it is the space which is mostly connected with all other adjacent spaces visibly. Living is the space that has the lowest value of visiual integration[VI]stating that it is segregated from the rest of the spatial organisation. The local measure visual control from the VGA analysis shows that Visual control is higher in the dining.

•Compact apartment type
The spaces are organised in a sequence where the living as a male dominated space is located near the exterior at depth [1]. The dining is located next to it. Kitchen service and toilet are the rooms in the deepest areas that are distributed from the dining. In terms of depth sequence is as:

Exterior[0]>Living/Dining[1]>passage[2]>Rooms/Kitchen[3]>Toil/Ver[4]. Male zone Female zone [from depth 1]

Dining becomes the most integrated space with minimum RRA value. Kitchen, Bed rooms used by the female members mostly has higher RRA value indicating segregation from rest of the system.

The higher value of visual integration in dining space of these flats denotes that dining is the space which is mostly connected with all other adjacent spaces visibly and being placed at the heart of the arrangement, hold most activities performed by all the members of the family during the whole day and female heads prefers to work in those spaces to have a better control over the adjacent spaces while working.

5.0 Discussion and Conclusion

Privacy of household members was preserved in the introvert courtyard type house forms with the separation of male female zone, placing the male zones near the entrance and female zones at the deepest part .The court acts as the most integrating space that is also the most visually integrated .It has a higher visual control over the adjacent spaces that are used mostly by the women. The Courtyard's importance shifted it's in the later houses Due to compaction of spaces and was replaced by the dining in the later compact apartments. The housing societies and developers while providing compact apartments with affordable limit is reducing certain spaces that created the preamble to the sequence of the domestic organisation to maintain privacy of the inner female zones. As a result the female zones are coming near to the entrance.
Contemporary women living in these apartments perform out door activities along with their regular family duties. Although they desire a control over the adjacent spaces from their working area in the domestic environment still they prefer to preserve their privacy from the outsider's zone. Apparently it seems that female members are using the total apartment space equally with their male members but actually they are compromising with the tailored domestic space considering their privacy. In spite of morphological changes of domestic space organization from traditional to present day context, privacy with respect to women users has been affected with increase of visibility of the inner spaces from the visitors area but controllability over the adjacent spaces tends to resume its position that was evident in the traditional courtyard type living too.

Aknowledgement: *This paper is based on the ongoing PhD research conducted in the department of Architecture,BUET,under the supervision of Dr. Farida Nilufar since April 2005.*

Bibliography:

Altman I, 1980, *Human Behaviour and Environment: advances in the Theory and research,* vol 4, Environment and culture (ed) Altman I and Carol Werner, Plenum press pub, NY and London.

Barrett, M, 2000, *Gender Space Architecture*, Edited by J. Rendell, B. Penner, I.Borden, Routledge pub. London.

Faris Ali Mustafa, Ahmad Sanusi Hassan, Salahaddin Yasin Baper, 2010, *Using Space Syntax Analysis in Detecting Privacy: A Comparative Study of Traditional and Modern House Layouts in Erbil City, Iraq , Asian Social Science*, Vol. 6, No. 8

Goffman Ervin, *1959, the Presentation of Self in Everyday Life*, Penguin Books, London.

Ghafur S., *Space Architecture, Encyclopaedea of Women and Islamic Cultures*, vol 4, Saud Joseph (edited) Brill Publishers.

Hillier B, Hanson J, 1988, *The Social Logic of Space*. Cambridge: Cambridge University Press.

Hanson. Julienne, 1998, *Decoding homes and Houses*, Cambridge University Press.

Hafiz R, 2011, *Evolution of Housing Pattern in Dhaka : From Huts to High Rise Apartments, 400 Years of Capital Dhaka and Beyond*,Vol III, *Urbanization and Urban Development*,(eds) Sharif uddin Ahmed,Roxana Hafiz,A K M Golam Rabbani, Asiatic Society of Bangladesh.

Hossain A, 2010, *Living in the High-rise flats and Apartments in Dhaka City*, Journal of Jahangirnagar University Dhaka,vol 15.

Imamuddin, A.H. 1982, *A Study on Urban Housing in the Context of Dhaka*, Bangladesh, Unpublished Master's thesis, Catholic University of Leuven, Belgium, 1982, p-1.14 P. 2.28

King A. D, 1984, *The Bungalow, The production of a global Culture*, pub. Routledge & Kegan Paul, P.51

Lawrence Roderick,1987, *Housing Dwelling and Homes:Theory Research and Practice*, John Wiley and Sons.

Lawrence, R J, 1993, *The Meaning and Use of Housing*, (ed) Ernesto G arias, Avebury pub, England.

Lidia S,1981, *The problems of Privacy in Mediterranean Anthropology, Women and Space*, (Ed) Shirley Ardener, Croom Helm Pub., pp 89-111.

Monsoor, T, 1999, *From Patriarchy to gender equality: Family Law and its Impact on Women in Bangladesh*, The UPL,Dhaka.

Nilufar F., 2011, *Urban Morphology of Dhaka City: Spatial Dynamics of a Growing City and its Urban Core, 400 Years of Capital Dhaka and Beyond*,Vol III, *Urbanization and Urban Development*,(eds) Sharif uddin Ahmed,Roxana Hafiz,A K M Golam Rabbani, Asiatic Society of Bangladesh, pp187-210.

Oliver P, 1987, *Dwellings: The House across the World*, Phaidon Press ltd., Oxford.

Rob and Asaduzzaman, 1997, *Dhaka: Making of a Mega city*.

Rapoport A, 1969, *House Form and Culture*, Prentice-Hall Inc. London .

Rahman M., *Multiple Courtyard Mansions of Old Dhaka*.

Rendell, J, 2000, *Gender Space Architecture*, Edited by J.Rendell, B. Penner, I.Borden, Routledge pub. London.

Schoneaur N,1981, *6000 years of housing*, vol. 2: *The oriental urban house.*

Turner, A., Doxa, M., O'Sullivan, D., Penn., A., 2001, *"From Isovists to Visibility Graphs", Environment and Planning*, B, 28(1):103-120.

Turner, A., 2003, "*Depthmap: A Program to Perform Visibility Graph Analysis"*, J. Hanson (Ed.), Proceedings, 4th International Space Syntax Symposium,London.

Bellal T, 2007, *Spatial Interface between Inhabitants and Visitors* in M' Zab Houses, Proceedings, 6th International Space Syntax Symposium,Istambul,

Guney Y, 2007, *Analyzing Visibility Structures in Turkish Domestic Spaces*, Proceedings 6th International Space Syntax Symposium, Istambul.

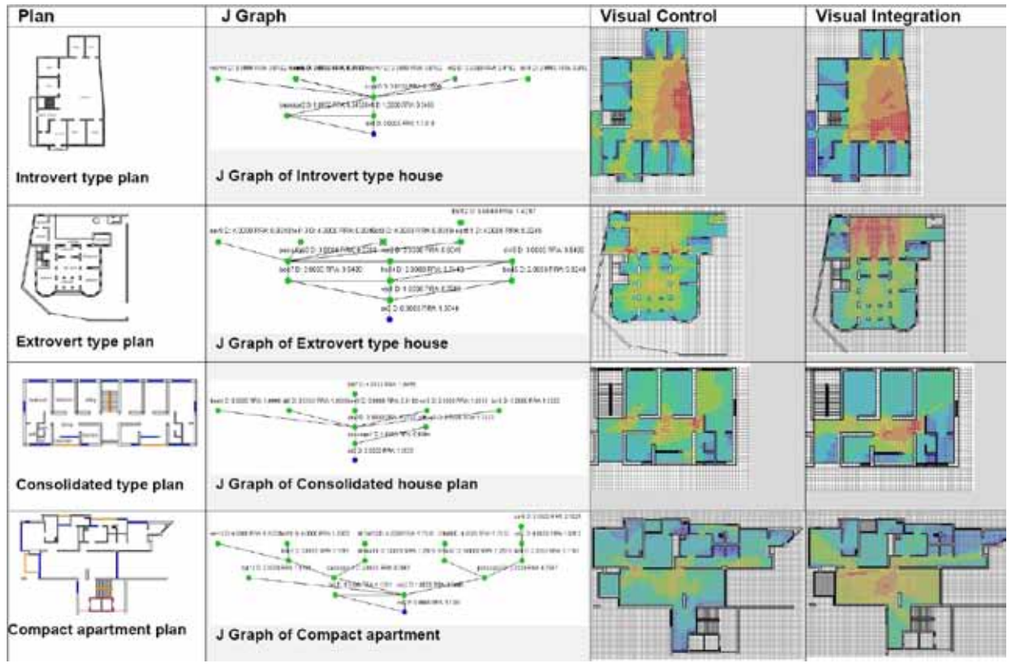
Zako, R, 2006, *The Power of the Veil: Gender Inequality in the Domestic Settings of Traditional Courtyard Houses, Courtyard Housing: Past, Present and Future*, (ed) Brian Edwards, Magda Sibley, Mahamad Hakmi and Peter Land, Taylors & Francis.

6.0 Legend:

Figure 1
Plans, J graph, Visual Control and Visual Integration

Table 1
Depth and RRA Value from J graph

Table 2
Visual Control and Visual Integration values



Type	Room	Depth				RRA					
	passage	liv	din	kit	bed	CY	passage	liv	din	kit	bed	CY
Introvert-1	1	2	3	3	3	2	0.45	1.18	1.0	1.0	1.18	0.27
Introvert-2	1	1	3	3	3	2	0.54	0.54	0.82	0.82	0.82	0.09
Introvert-3	1	1	3	3	3	2	0.82	1.36	0.64	1.18	1.18	0.45
Extrovert-1	1	2	3	4	2	4	0.77	0.71	0.55	0.93	0.82	0.82
Extrovert-2	1	2	4	5	4	5	1.26	0.77	0.71	1.15	1.09	1.15
Extrovert-3		1	2	4	3	4		0.68	0.45	1.36	0.98	1.36
Consolidated-1	1	2	2	3	3		0.64	1.36	0.27	1.00	0.82	
Consolidated-2	2	2	1	3	2		0.57	0.83	0.32	1.21	0.98	
Consolidated-3	1	2	3	3	3		0.57	1.25	0.95	1.40	0.95	
Compact-1	1	2	2	3	4		0.87	0.91	0.45	0.99	0.91	
Compact-2	2	1	1	3	3		0.79	1.13	0.65	1.18	1.25	
Compact-3	3	1	2	3	4		0.66	0.99	0.60	1.09	1.04	

Type	VC					VI				
	liv	din	kit	bed	CY	liv	din	kit	bed	CY
Introvert-1	0.87		0.85	0.98	1.31	6.57		6.35	7.30	12.27
Introvert-2	0.95		0.75	0.61	1.47	8.83		9.53	8.22	18.75
Introvert-3	1.11	0.81	0.82	0.83	1.70	4.46	3.66	4.35	4.34	06.73
Extrovert-1	1.24	0.94	0.77	0.78	1.29	12.51	11.59	6.81	8.16	15.77
Extrovert-2	0.88	0.92	0.83	0.78	1.14	7.41	09.66	6.34	7.54	8.84
Extrovert-3	1.11	1.43	0.81	1.14	1.63	10.56	11.67	6.50	8.35	13.46
Consolidated-1	1.04	1.36	0.80	1.16		4.83	10.55	6.43	6.86	
Consolidated-2	0.99	1.69	0.74	0.90		7.06	11.60	3.16	6.61	
Consolidated-3	1.02	1.13	1.11	0.97		5.16	6.78	3.09	4.51	
Compact-1	1.04	1.74	0.65	0.84		10.10	16.31	7.79	6.14	
Compact-2	1.23	1.37	0.84	0.98		10.39	11.19	7.19	8.25	
Compact-3	1.64	1.80	0.70	0.82		15.22	15.38	6.28	6.39	

Corey T. Griffin
Portland State University, U. S.

The Paddington Terrace House: An Example of Incrementally Accommodating Change from the House to the City

I. Introduction

As a reaction to the strict functionalism of modern architecture, a number of social housing failures and an increasing awareness of the environmental impact of buildings, architects and academics in the second half of the 20th century took on the issue of how to design housing that could accommodate change over time. Two distinct approaches developed. "Flexible" housing allows users to readily move or transform spaces at will through the use of moving partitions or more permanent alterations. This method was systematized through the open building concept of support structures and in-fill (Habraken et al., 1976). On the other extreme, "adaptable" housing does not undergo any significant physical change over time but is designed to accommodate a number of uses through its initial design, dimension and organization. This approach is best summarized in the concept of the ambiguous, "multifunctioning" or multi-purpose room (Venturi, 1966). Some researchers analyzed existing housing considered flexible or adaptable, much built speculatively in the late 19th century, looking for design attributes or spatial characteristics that could explain how they could be continuously inhabited for over a century (Rabeneck et al., 1974, Moudon 1986). Recently, the social, economic and environmental advantages of flexible and adaptable housing have been well documented along with a wide range of case studies (Kendal et al., 2000, Schneider et al., 2007). This paper builds on this discourse by documenting a method of incremental change in row housing that has the ability to meet both current and future needs of inhabitants, neighborhoods and cities.

Incremental changes include the ability to renovate, alter and extend existing spaces for new uses, services and technologies or the addition of entirely new spaces to an existing building. Incremental change encourages both flexibility and adaptability as neither alone can adequately incorporate a wide range of needed variations. A systematic analysis of design and construction is required not in terms of how things are built but in terms of how they can be transformed after they are built if incremental change is to play a significant role in housing (Griffin, 2011). The dimension of spaces as well as how they are accessed both relate directly to how housing could be used, reused and altered over time (Chow, 2002). This approach also requires analyzing exterior spaces and the relationship of houses to one another. Structuring incremental change across lot lines ensures that each house can be transformed without sacrificing the quality of existing spaces, those of the house being altered or those of a neighboring house, or impeding any transformations a neighboring house might undergo. Consequently, accommodating change must be studied not just at the scale of the house but the block and neighborhood as well.

Specifically, this paper documents incremental change in the terrace houses of the Paddington neighborhood, one of the first suburbs of Sydney, Australia. In general, terrace, terraced or row housing offers a more sustainable and viable alternative to the development of single-family detached houses prominent in North America and Australia (Wiegelman, 2006). By removing the underutilized side yards between the typical contemporary detached houses, row houses can increase density. By sharing walls with neighboring houses, row houses reduce the amount of energy required to heat and cool (Jung, 2006). At the same time, row houses still provide many of the amenities prospective inhabitants seek in a single family detached house. These include ownership of the property and building, garages, backyards, adequate privacy, and multiple stories. In contrast to multi-story, multi-unit housing, they allow for significant external additions outside the original building envelop as well as internal transformations (Friedman, 2002). Furthermore, the row houses in Paddington have been continuously inhabited for over 100 years during which time the demographics have changed drastically. From new arrivals from England at the turn of the century to European immigrants after World War I and II to artists and students during the 60s and 70s to urban professionals, the terrace houses have accommodated a variety of occupants, new technologies and uses. Consequently, Paddington and the terrace houses there offer an ideal case study to examine the design and construction of housing that accommodates incremental change.

II. Sources and Methods

Through a detailed survey of the neighborhood using field research, aerial photographs, planning documents and floor plans, this paper documents the development and transformations of the Paddington terrace houses. The field research in Australia was conducted over three weeks in 2004 and consisted of documenting over twenty terrace houses, collecting planning documents and maps and a literature review at local libraries. Aerial photographs were used to verify additions and dimensions.

In order to study a wider range of terrace houses, this paper relies on house plans and photographs generated for real estate agents when a house is sold. This documentation was collected from a range of real estate websites in 2005, 2008 and 2012. While the plans come from a variety of sources, these plans were checked against field measurements, planning documents and aerial photographs where possible and found to be accurate. Representing the full geographic extents of the neighborhood, a database of 108 terrace houses was generated representing 3.5% of the 3,064 two or more story terrace houses identified in the 2006 census (Australian Bureau of Statistics, 2008). Houses that were atypical, including one-story houses and those without a balcony or veranda, were excluded from this study. The database itself is quite large and not reproducible for this paper, but it includes a wide range of statistics about each house including the overall width, stair configuration, number of rooms and bathrooms, and types of additions or alterations. This robust database highlights several key trends with respect to width, stair location, and incremental transformations discussed throughout the paper.

III. Paddington Terrace House

The history of the Paddington neighborhood and terrace houses is well documented by Kelly (1978), and only a brief summary of relevant details will be offered here. As one of the first suburbs of Sydney, Paddington started as housing for craftsmen, stonemasons and carpenters, working on the nearby Victoria Barracks during the 1830s. The craftsmen built their own houses out of local sandstone based on 19th century, Georgian, English working class terrace houses of the type documented by Muthesius (1982). These houses had flat, unadorned façades, placed along the sidewalk edge. As the climate of Sydney is radically different than that of England, the English terraced house typology was quickly adapted by adding a balcony and verandah to the front of each house, providing shade and an exterior space connected to the main living and bedroom above (Figure 1). At the same time, the terrace houses were set back ten to twenty feet from the sidewalk to provide a front garden.

Built before electricity, the two to three story terrace houses are only two rooms deep with at least 3m (10ft) ceilings to allow for daylighting and ventilation. The houses were organized with a formal parlor facing the street and a room for dining or living opening onto the backyard. The upper floor mirrored the lower with two bedrooms spanning the width of the lot. If a terrace house was more than two rooms deep, the third room, typically a scullery with a bedroom above, would not be the full width of the lot, leaving a three to five foot gap from the bearing wall for the middle room to have a window (Figure 2). Occasionally, the scullery and water closet would be a separate structure sited three to ten feet away from the house itself. Similar to the addition of a third room, the scullery would not span the full width of the lot, and the water closet attached to the rear of the scullery would be narrower, extending the house along one of the two party walls and thinning as it progressed deeper in the lot (Figure 4). In some cases, the water closet was a separate shed built along the rear property along alleys designed for hauling "night-soil." Housing four to six people on average, these five to six room terrace houses made up about 80 percent of the housing built in Paddington between 1870 and 1890 (Kelly 1978).

Today, the Paddington terrace houses used in this study range from four to eleven rooms including anywhere from two to five bedrooms. In 2006, the average household size across all of Paddington is 2.0 people with 1.1 people per bedroom (Australian Bureau of Statistics, 2008). Total floor areas ranges from under 50 square meters (roughly 540 square feet) to over 200 square meters (2,150 square feet). The average terrace house is seven rooms including three bedrooms. In addition to these spaces, there are an average of two bathrooms. Only nine percent of the houses in this study have a habitable basement, and most of these are on steeply sloped sites where rear yard is a full story below the entry level.

Dimension

The majority of the terrace houses were built speculatively. Land speculators would buy property, typically from the ranchers who owned the rolling hills around Victoria Barracks, and divide it first into lots with 60-foot wide frontages to proposed streets. As some speculators believed they could make more profit by selling more lots, they divided their parcels into dimensions as narrow as 3 meters (10 feet) and typically 24-36m (80 to 120ft) in depth. Instead of reselling the smaller lots and allowing individuals to build their own house, developers would build a series of terrace houses to rent or sell. A recent study of three large blocks in Paddington noted that terrace houses were primarily built in groups of two to six houses (Watanabe et al., 2007).

Of the houses analyzed for this study, the width between bearing walls of the terrace houses ranged from 2.8m to 6.6m (9ft to 22ft) with an average width of 4.3m (14 ft). The distribution of widths has two distinct peaks at 4.0m (13ft) and 4.4m (14.5ft). These two widths alone make up 40 percent of the houses in this study and supports Kelly's assertion that the average lot width in Paddington is approximately 4.6m (15ft) or a 60-foot frontage divided into four lots with bearing walls measuring a minimum of 23 cm (9 in). Over 90 percent of the terrace houses are less than 5.5m (18ft) wide and nearly a quarter are less than 4.0m (13ft) wide. Due to these narrow widths, the density of Paddington terrace houses ranges between roughly 35 to 47 dwelling units per hectare (14 to 19 dwelling units per acre) depending on the width of houses in a given area. The average density of Paddington including apartment buildings and open spaces is 34 dwelling units per hectare (Australian Bureau of Statistics, 2008). This level density has been identified as critical in providing housing that supports walking, public transportation, commercial enterprise and other social, environmental and economic benefits while maintaining individual ownership of land and buildings (Bennet, 2011).

Construction

Despite the range of widths discussed in the previous section, the floor plans and construction of most Paddington terrace houses are remarkably similar. The construction of the terrace houses is critical in understanding how change can be accommodated incrementally. Load bearing party walls of brick built upon sandstone foundations run parallel to one another along lot lines. In most cases, these walls extended past the roof and enclosure to provide fire protection and emphasize the boundaries of each individual house. Floor and roof joists run between these bearing walls. As the spans were usually less than 20 feet, no interior load bearing walls or columns were needed. Therefore, the front and rear facades as well as all interior walls are non-loading bearing. Figure 5 highlights the hierarchy of how a typical terrace house can be transformed overtime with more permanent elements, bearing walls and floors, in black and non-loading bearing elements in grey. This assembly allows for a range of transformations within the interior as well as extensions and additions to both front and rear of the terrace houses. Consequently, indoor plumbing was easily incorporated, allowing for the addition of bathrooms and kitchens. One of the more typical alterations is the removal of the wall between the former parlor and dinning/living space to shift from Victorian patterns of living with isolated rooms to open-plan living spaces. This transformation is documented in one-quarter of the terrace houses in this study. This particular alteration is potentially limited as the lateral stability of a row is compromised if too many houses remove this wall, and the municipal council has now enacted codes regulating removal of this wall. The assembly also lends itself to the often-steep topography of Paddington as individual houses did not have share the same foundation and could "slip" vertically between the load-bearing walls that clearly divided them.

Incremental Transformations and Additions

Despite the relatively small size of the Paddington terrace houses, they have accommodated a wide range of incremental changes over the past 120 years. While these may at first glance seem random (Watanabe et al., 2007), many of the transformations and additions are influenced by the width and stair type more than any other factor. In terms of adaptable transformations that require only the repurposing of existing spaces, the four main rooms of the house – the parlor at the front, the informal living and dining room at the rear and two bedrooms upstairs – remain relatively unaltered in most terrace houses today with exception of adding closets. The dimension of these spaces and how they are accessed has left enough ambiguity to meet the needs and life-styles of several generations of inhabitants. Through the additions of dormers and stairs, the originally unutilized space in the gabled roof has been turned into an extra bedroom in over one-third of the houses in this study. This transformation is seen primarily in the terrace houses with stairs parallel to the bearing walls, 70 percent of all attic conversions, as these are more readily transformed into a three-story staircase than those running perpendicular.

The primary additions to the Padding terrace houses occur in the rear where the original scullery is transformed into a modernized kitchen and additional living space. There are three primary types of additions that include (1) extending the full width of the terrace house only on the ground floor with potentially a stepped addition above, (2) extending the full width of the terrace house but creating a small, narrow courtyard between the original house and the addition, or (3) a stepped addition extending the original house deeper into the rear yard. Narrower houses typically extend the full width of the house while wider houses use courtyards (Figure 6). The stepped addition likely has less to do with the width of the house and more to do with the stair orientation. Defining the width of the original rear extension, the perpendicular, switchback stair associated with houses 4.2-4.4m (14ft) wide acts a template for future additions and makes a courtyard scheme less viable. Figure 4 highlights how a single terrace house has been transformed from its original as built condition through subtractions and additions to its current state.

The four to six-foot depth of the verandahs offers the opportunities to use these spaces as exterior porches, enclose the upper balcony as a separate space off the main bedroom, or extend the ground floor parlor to edge of the balcony. Herman Hertzberger (1991) would argue continuing the bearing wall past the enclosure and edge of the verandah, enclosing it on three sides, offers an incentive to transform the space. There are a few streets where these spaces have been enclosed or extended on the ground floor space to make commercial storefronts (Figure 3). However, the local council declared Paddington a heritage conservation area in 1995. If an individual wishes to renovate or make any alterations to a terrace house, they must restore the front façade to its original appearance, removing any extensions or additions. This is reflected both in relative lack of houses in this study with an enclosed balcony, only six total and all of which are in need of remodeling, and that the boundary of the historic district is made visible with often radically transformed façades on the other side of the street.

IV. Block and Neighborhood Scale

Structuring incremental change across lot lines ensures that each house can be transformed in the same way without sacrificing the quality of existing spaces, those of the house being altered or those of a neighboring house, or impeding any transformations a neighboring house might undergo. In the Paddington terrace houses, the positions of the original sculleries along one of the bearing walls, the "growth" or addition wall, offers a shared understanding of how subsequent additions and extensions could be structured. Looking at the larger urban fabric of Paddington, it is clear that additions have been made along these

walls. Two neighboring terraces can share the same addition wall creating mirror image plans or use different walls where each house has the same plan and windows from the additions look onto the blank, back side of the neighboring addition wall.

While there are many similarities between the Paddington terrace houses and English workers' terraced houses from the same time period, one key difference was the additions of alleys in Paddington to address sanitation needs. Ranging from 2.5 to 5.5m (8 to 18ft), the alleys now provide automobiles and pedestrians access to the rear of almost every lot. Nearly half of the houses in this study have either a garage or parking spot off an alley. Where garages cannot be added due to topography, many streets are generous enough in width to allow for cars to park perpendicular to the direction of traffic and the alleys themselves can provide parking. Currently, only three houses in the study have accessory dwelling units accessed by the alleys, but as the need for housing in Paddington increases the rear portion of the lots offer opportunities to continue accommodating change.

VI. Conclusions

While there will continue to be accidental flexibility and adaptability within housing, we cannot rely on it. The ability to accommodate change must be anticipated, structured and intentionally integrated. Incremental change in housing has the potential to accommodate unforeseen shifts in demographics, new technologies and different lifestyles. As a result, the natural and economic resources invested in these buildings will not be wasted. At the same time, incremental change allows a major portion of the built environment to endure while allowing for individuals to interact in significant and meaningful ways to define and maintain a sense of place. The Paddington neighborhood has accommodated a wide variety of inhabitants, new technologies, new forms of transportation and new uses through a shared understanding of how to transform the houses. This paper has argued the design of the terrace houses on all levels, from the individual house to the neighborhood, contribute to the longevity of this housing stock. In particular, this paper has highlighted the role dimension, construction and access play in the ability for row housing to accommodate change.

VII. Bibliography

Australian Bureau of Statistics, *2006 Census Community Profile Series: Paddington (State Suburb)*, ABS, Canberra, 2008.

Bennet, D. *Shaping suburbia*, in "Urban Design Forum Quarterly," n. 94, 2011.

Chow R.Y., *Suburban space: the fabric of dwelling*, University of California Press, Berkeley, 2002.

Friedman A., *The adaptable house: designing homes for change*, McGraw-Hill, New York, 2002.

Griffin C.T., *Ordering the structure of light wood framed row houses to sustainably accommodate change*, in Gibson M., Kendall S., eds., *Architecture in the Fourth Dimension*, Ball State University, Muncie, Indiana, 2011.

Habraken, N.J., Boekholt, J.T., Thyssen, A.P., Dinjens, P.J.M., *Variations, the Systematic Design of Supports*, MIT Press, Cambridge, Mass., 1976.

Hertzberger, H., *Lessons for students in architecture*, 010 Publishers, Rotterdam, 1991.

Jung P., *Guidelines to energy-efficient building with special consideration of construction of semidetached and terraced houses*, in Schittich C., ed., Semi-detached and terraced houses, Birkhauser, Basel, 2006.

Kendal S., *Residential Open Building*, E & FN Spon, New York, 2000.

Kelley, M., *A Paddock Full of Houses: Paddington 1840-1890*, Doak Press, Sydney, 1978.

Moudon, A.V., *Built for Change: Neighborhood Architecture in San Francisco*, MIT Press, Cambridge, Mass., 1986.

Muthesius, S., *The English Terraced House*, Yale University Press, New Haven, 1982.

Rabeneck A., Sheppard D., Town P., *Housing: flexibility/adaptability?* in "Architectural Design", v. XLIX, n. 2, 1974.

Schneider T., Till J., *Flexible Housing*, Architectural Press, Oxford, 2007.

Venturi R., *Complexity and Contradiction in Architecture*, Museum of Modern Art, New York, 1966.

Watanabe M., Ichihara I., Amano Y., *Formation process and character of terraced houses in Paddington*, in "Journal of Architecture Planning", n. 620, 2007.

Wiegelmann A., *Living in Terraced Housing*, in Schittich C., ed., Semi-detached and terraced houses, Birkhauser, Basel, 2006.

VII. Legenda

All photos by author. All graphics by author with assistance from Brian O'Reilly.

Figure 1. Paddington terrace houses, front elevation.

Figure 2. Paddington terrace houses, highlighting stepped rear extensions.

Figure 3. Terrace houses converted into storefronts by infilling the verandah on Williams Street, Paddington.

Figure 4. Plans of 6 Alma Street, Paddington highlighting the location and type of incremental changes it has undergone.

Figure 5. Exploded isometric showing the construction of 90 Liverpool Street, Paddington with non-load bearing elements in light grey.

Figure 6. The percentage of a given addition type versus the interior width of a terrace house. This graph demonstrates the relationship between house width and the type of addition deployed.

figure 1

figure 2

figure 3

figure 4

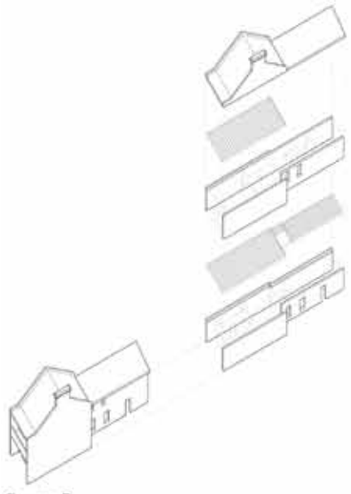


figure 5

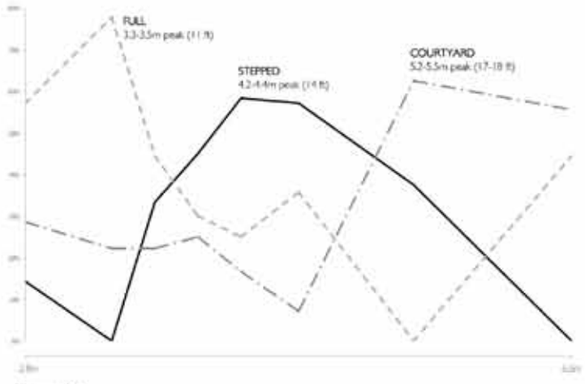


figure 6

Angelika Juppien - Alex Willener
University of Applied Sciences and Arts Lucerne, Swiss

Building for Diversity: Residential areas as a socio-spatial context for diverse neighbourhoods

A preliminary study supported by the University of Lucerne was carried out by an interdisciplinary team to research the available knowledge on housing developments for diverse populations. International literature was analysed, exploratory talks were carried out and housing development projects, which attempt to foster co-existence of heterogeneous populations by planning surroundings and infrastructure, were investigated (Gassmann, Juppien, Obertautsch, Willener 2011). This report discusses the postulates of housing diversity from a transdisciplinary point of view.

"We know this place is a ghetto, but we've got used to it" was how a Tamil resident described Bernstrasse, Lucerne at the beginning of BaBeL, a district development project that has been running for several years (cp. Willener et al. 2008). Burdened by its shady position, cramped conditions and excessive traffic emissions, this area virtually tells the story of Swiss migration history. This suburb has always been the first port of call for job and refuge-seeking immigrants – at times from rural areas in Switzerland, southern Europe, the Balkans, Asia, Africa and Latin America.
As refugees, the Tamil and his family were allocated an apartment in this area – they had no choice. The poorly-maintained house is inhabited solely by immigrants from various parts of the world. Cultural diversity –under rather depressing conditions – is the norm in deprived neighbourhoods. Some ten years later, the Tamil family received the Swiss residence permit. Thanks to their new status and hard work, they were able to move into a more modern apartment in another area where the majority of inhabitants were either Swiss, or immigrants from European countries.

This example is merely a tiny facet of the phenomenon that Swiss society (like all European societies) is becoming more diverse. However, such diversity is not only the result of global migration flows and the hybrid and multiple identities associated with them. Processes of individualisation and various lifestyles and circumstances within the 'native' population also play a decisive role. An 'atomisation' and 'cultural reproduction' (Albrow 1998) of society has been predicted.
This also affects the way we live: Residential areas with a mix of people from different cultural backgrounds are the norm in many places. Despite the widespread phenomenon of segregation and the existence of relatively homogenous residential areas, this will also be the case in the future. Increasingly frequent claims by well-known sociologists ('segregation is a good thing, because it avoids conflicts by distancing oneself from those who are different' Walter Siebel in Güntner 2010, p. 4) are, on the one hand, blank provocation for persons living in deprived areas, and, on the other hand, ignore the fact that apart from upper and lower class ghettos, there are in reality many more ordinary residential areas where the housing market welcomes individual and global circumstances, biographies and lifestyles.
For those who do not (or can not) choose to 'live amongst equals', it is highly probable that their neighbours live a completely different lifestyle, have other traditions, or speak a different language. But this also has to be learnt; because heterogeneity is not necessarily beneficial for good neighbourly relationships – on the contrary. Literature emphasises that a homogeneous population is one of the prerequisites for a successful neighbourhood (cp. for example, Harloff 2002, Gehl 2011). It is clear that the more diverse the neighbourhood is, the richer the experience of different cultures. This presents opportunities for positive identification with both the neighbourhood and the area, and these can be enhanced by the structural, physical and material characteristics of the residential area.

Living Space and Diversity

Despite the widespread phenomenon of residential segregation and the existence of relatively homogenous residential areas, housing estates with a mix of people from different cultural and social backgrounds are commonplace in many regions, and, in view of the increasing 'atomisation' and 'cultural reproduction' (Albrow 1998) of society will also be of significance in future housing developments.

The interdisciplinary research project *Building for Diversity* addresses these issues and includes – for the first time in the context of housing developments – the concept of diversity, which is currently being discussed in various disciplines.
In general, diversity refers to the human qualities and characteristics that are different from our own. Diversity refers to a variety of characteristics; not only the classical, visible distinguishing characteristics such as gender, age or ethnicity, but also those which are not immediately apparent such as personal values, religious beliefs, sexual orientation, cultural background (Thomas and Ely 1996).

Diversity as a concept is essentially discussed in cultural, economic, social and education sciences. The field of economic sciences, for example, primarily applies the concept of diversity management in which the potential resulting from diversity triggers proactive measures and synergetic use.
In recent times, we have seen that the concept of diversity is being applied to spatial location. The Italian architect Camilla Perrone, for example, postulated (2011) in her programmatic title DiverCity for a new difference-sensitive approach in urban planning. The German sociologist Andreas Thiesen (2011) exemplified the concepts of diversity and diversity management for district development in the context of urban sociology. The *Building for Diversity* project investigates social cohesion perspectives within the neighbourhood that are to be promoted by taking into consideration and integrating diversity. This project therefore considers the next smallest dimension, the housing estate. Accordingly, it seems obvious to follow on from the understanding of diversity that Thiesen has developed for districts. The social environmental approach put forward by the French sociologist Pierre Bourdieu served Thiesen as a theoretical background for his concept of diversity management in an urban district. Social environment definitions group like-minded people who have similar values, lifestyle principles, mentalities and relationships with fellow human beings. People belonging to the same group interpret and shape their environment in a similar way and in doing so, distinguish themselves from other social environments.
Thiesen limits commonly-used heterogeneity dimensions (gender, nationality/ethnicity, religion/philosophy, disability, impairment, age/generation and sexual orientation) for the most part to socio-economic and ethnic-cultural dimensions and these are discussed in the context of his research – a deprived neighbourhood. Thiesen's work is, from the perspective of diversity, essentially an analysis of neighbourhood structure and district development in the Social City programme in Hannover-Stöcken. It is a new contribution to the discussion in managing diversity and differences in deprived neighbourhoods and an approach which offers a possible solution for district development issues: because diversity management demands clear recognition of individualism and, at the same time, brings together the common interests of individuals in an organised framework. Thiesen concludes that diversity management in district development boils down to managing every-day culture to strike a balance between different groups of residents and their specific way of life.

How can such a relatively ambitious goal be achieved when developing and constructing housing estates for heterogeneous populations? What conceptional elements can be defined for community-building and cohesion-promoting housing developments for heterogeneous populations? Is it possible to develop an approach for 'community design' – a definition coined by the American urbanist Sidney Brower (2011)?

Outside space for the neighbourhood

To answer these questions, we refer to the Danish architect and town planner Jan Gehl who with his publications has proved to be a fervent advocate of promoting contact and communication which lead to lively housing estates. With his publication *Life between buildings* (2011), first published in the 70s and subsequently re-printed over the years, Jan Gehl has made a significant contribution to the social function of (semi-) private space. He supports the theory that built structures and circumstances can prevent, hinder or promote social life: '... it is possible to influence how many people and events use the public spaces, how long the individual activities last, and which activity types can develop.' (p. 37)

Gehl criticises the functional design of urban and residential housing areas that has developed through modern and post-modern to present-day architecture. Apart from functional segregation, the dimensions of the buildings, outer and indoor space are above all, not sympathetic to the human senses (especially the sense of sight): '... they are too big and lack clarity, have the character of a no man's land' (p. 61). Such environments are perceived as uninviting and impersonal and this invariably leads to people only *carrying out necessary* activities, such as going to work or to the shops.
In contrast, people tend to linger in carefully planned, qualitative outside spaces and take part in a wider variety of optional recreational and relaxation activities. This, in turn, results in communal activities.
Gehl initially differentiates between different levels of contact in view of their intensity: High intensity (close friendships, friends, acquaintances and casual contacts), and low intensity and passive contacts ('see and hear' contacts).
Life between the buildings takes place mainly at the lower level of the scale. Gehl sees this as a key element, because for him, the chance to see, hear and occasionally speak to one another is the first step in getting to know each other. In addition, they present opportunities to inspire and stimulate and to gain information on the social environment. Frequent encounters in connection with everyday activities increase the chances of neighbourly contact. If however, these contacts are less frequent, the boundaries between isolation and contact are more clearly defined: one is either alone or with close friends.
Based on this premise, Gehl develops a concept with three 'elementary' requirements on public space. These should provide the desired conditions for necessary, *optional, free time related* as well as social activities.
A key element for Gehl is the consideration of different degrees of privacy and access and their transition. Private space (apartments, balconies, gardens) border on semi-private space (entrances, stairwells and hallways). Access to semi-public space is limited to a certain number of apartments or a particular building and should be clearly distinguished as such from public spaces which are accessible for everyone.

The division between semi-public und public spaces makes it possible to take personal control over the need for privacy or openness, to gradually get to know others in the neighbourhood, and encourages joint responsibility of semi-private spaces. It is also important to create transitional spaces with flexible boundaries ('soft edges') that allow residents to move more easily between private and public – to venture out or to withdraw. These transitional spaces are designed to encourage people to do many indoor activities outside. The buffer zone between public and private space should be designed to give a clear spatial indication which supports the privacy regulation. Direct or no transitions between private and public space ('hard edges') reduce willingness to communicate and lead to psychological and physical barriers. Semi-private space should be designed to enable a wide variety of activities to make them inviting and to encourage people to stay: 'Something to do, something to work with, directly in front of the houses' (p. 184). This is not to be assumed through the usual channels of communication, but to be determined through interdisciplinary dialogue and talks with residents. Common rooms should be designed to accommodate the interests of different users and offer further possibilities for various groups.

In his work, Gehl does not concern himself with the aspects of diversity and it can be assumed that attitudes to privacy and openness are culture-specific and that building principles do not therefore generally function across cultures. The task will be to establish what works for whom and in what circumstances.
Whereas Gehl focuses on (semi-) public space, private space should not be neglected from the point of view of diversity. As mentioned at the beginning of his article, increasingly complex social structures go hand in hand with a feeling of insecurity. That is why private space represents an increasingly important paradigm for life between known and unknown, privacy and openness. According to Maderthaner (1995), privacy is a basic need related to living space that serves to protect intimacy or to ensure protection from onlookers. Each person has, on the one hand, the need to be alone; on the other hand, needs also to be able to make social contact at any time (Hellbrück & Fischer, 1999). Complementary to having a private area in which to retreat, it is also of great importance to be able to find 'one's way back' into society. Structures are to be provided which enable residents to individually regulate this reverse process.
The relationship between privacy and openness can be of value in trying to understand the lifestyle of different cultures because each culture has decided on and put into practise a characteristic relationship between these two values. (Altmann and Gauvain 1981). A housing estate that conforms to the diversity approach is distinguished by subtle nuances of different degrees of privacy and openness that have to be continually reinterpreted and repositioned. Altman (1975) understands privacy regulation to be a process of optimisation, i.e. it aims for a certain degree of privacy. If this need is not satisfied, it can lead to tension between neighbours, stress and social exclusion. Different people have different needs in terms of neighbourhood/ community and in terms of privacy. ('Different people balance their need for community and privacy in different ways', Brower 2011).
Using many examples, Gehl illustrates the interaction between the physical environment and the activities (especially social) taking place within it. This leads to his demand for interaction between the project (the built structure) and the process (the social activities). Conclusions from this postulate are however not developed further.

Interventions and processes

In order to fill this gap, we are including another disciplinary approach –sociocultural animation.
Publications dealing with aspects of neighbourhood and community in housing estates agree that the structural design alone is not enough. Various terms are used to describe interventions and processes that are seen as necessary to stimulate neighbourhood life and activate residents. This certainly applies for housing estates with heterogeneous neighbourhoods, because in homogenous neighbourhoods neighbourly cohesion is more likely to evolve by itself.
This requires communication, dialogue and encouragement as well as setting up resident groups, organizing projects and similar activities. Sociocultural animation, an occupation that is dedicated to 'promoting civil society, participation and cohesion' (Wandeler 2010), has an appropriate set of tools for social-spatial contexts.

In the context of housing estates for diverse populations, the following activities could be developed (Willener 2010):
The first important element is to set up participation opportunities and structures within the estate. This can begin already in the planning stages with potential buyers and prospective tenants having a say in certain creative and organisational measures (cp. Adliswil).
A suitable starting point in a multicultural housing estate is therefore to establish and include key persons. These are people who as a result of their function, role, linguistic competence and personality, play a vital role within the social environment and have contacts to many different groups of people, and who could assume a mediating function for activities in the estate, at schools and other local organisations.
In addition, it is a matter of encouraging collaboration and networks, setting up or supporting resident groups. They could take care of certain aspects such as activities, festivities, improving and looking after outside areas (such as community gardens), managing communal rooms or setting up new resources on the estate such as activities for mothers and children.
Ultimately, and not to be neglected, are advice and mediation in conflicts which can arise in a heterogeneous neighbourhood. The Luchwiese estate in Zürich is an example where sociocultural measures and approaches have significantly improved the social climate and were able to awake a sense of responsibility among the residents (cp. BWO 2010).

If we compare from an interdisciplinary point of view the postulate with diversity housing models, *the inter-ethnic neighbourhood housing model* project in Vienna is of interest (cp. Gassmann, Juppien, Obertautsch, Willener 2011). The very well investigated and documented project – which was a result of a property developer's competition – convinces not only in the required, crucial criteria: planning quality, cost-effectiveness and ecology, but also with a supplementary conclusive concept of

inter-ethnic and community living (Ludl 2003). The concept included populating the residential area with 'a balance between Austrians and migrants' (p. 69). Conceptional discussions ultimately resulted in such exclamations "completely normal residential building, as it should be built – with grass instead of gravel on the roofs, passageways instead of walls and a lot of space where the residents and meet and talk to each other" (p. 70). The integrative motto of the concept was: no restrictions with regard to origin, religion and ethnicity, planning provisions for changes in the number of family members, inclusion of spacious communal and recreational areas as well as impulses for intercultural activities. The organisation of the apartment layouts allows extensions and combinations to adapt to changes in the number of family members.
The 'Brunnenhof' project in Zürich (BWO 2010) is another practical example of a functioning diverse neighbourhood, where apart from constructional measures, a wide-ranging 'tool kit' was set up to create and support participatory schemes. The aim of this was to adopt variety and diversity as a potential. It is a further contribution to the issue, which Ludl gets to the heart of when he establishes that: 'Unfamiliarity and familiarity are relationships, they are neither characteristics nor absolutes, they are determined by interaction, can be influenced and changed.'

Apart from this theoretical-conceptional consideration, there is another important aspect: the economic aspect, which in the context of living and diversity has hardly been investigated up to now. The necessity for affordable living space for people on a low socio-economic level, in which migrants represent a high percentage, is contradictory to the demands for spacious community and semi-public rooms which ultimately make the apartments more expensive.
Based on these considerations, the attached concept map was drawn up to show the relationship between the elements of the research project.

In Europe, there are some isolated 'good practice' examples which honour diversity through structural differentiation and sociocultural activities. These projects put the term Diversity de facto into practice on the level of neighbourhood. However, there is a lack of a specific and interdisciplinary evolved overall concept for housing estates with diverse populations. At this stage, there are still open questions that the research team will continue to explore aiming to define the prerequisites for a future community design for heterogeneous housing estates.
The term 'community design' according to Sidney Brower (2011) is highly appropriate in this respect: "I use the word design to refer not exclusively (or even necessarily) to the actions of urban designers, architects but also to actions by developers, promoters, image makers, organisers[1] and residents themselves." Further: ".... the purpose of community design is to create relationships between people, not buildings, and the ultimate measure of a community design must be the extent to which it brings people together."

Notes

[1] 'Organisers' relates to the American term for 'community organising', a method of activating and participating which has many similarities to sociocultural animation.

Bibliography:

Albrow, Martin (1998): *Abschied vom Nationalstaat*, Frankfurt: Suhrkamp

Altman, Irvin (1975): *Environment and social behavior. Personal space, privacy, crowding and territory*. Monterey, CA: Brooks Cole.

Brower, Sidney (2011): *Neighbors & Neighborhoods. Elements of successful Community Design*. Chicago/Washington: APA American Planning Association

Bundesamt für Wohnungswesen BWO (2010): *Die Welt im Brunnenhof Zürich. Ein interkulturelles Familien-Wohnmodell. Primäre Konfliktprävention und Integrationsförderung. Schlussbericht über die Projektphase von 2007 bis 2009*. Bern: BWO

Gassmann, Juppien, Obertautsch, Willener (2011). *Building for Diversity Ergebnisse der Vorstudie*. Luzern. Unveröffentlichtes Arbeitspapier.

Gauvain, Mary; Altman, Irvin (1982): *A cross cultural and dialectic analysis of homes*. St. Saphorin: Georgi Publishing Company

Gehl, Jan (2011): *Life between buildings. Using public space*. Washington: Island Press

Güntner, Joachim (2010): *Das heikle Miteinander. Über Nachbarschaft und ihre Formen der Distanz und Nähe, der Segregation und sozialen Mischung*. NZZ Online 8.11.2010

Harloff, Hans J.; Christiaanse, Kees; Wendorf, Gabriele; Zillich Klaus (Hrsg.) (2002): *Nachhaltiges Wohnen. Befunde und Konzepte für zukunftsfähige Stadtquartiere*. Heidelberg: Physica Verlag

Ludl, Herbert (Hrsg.) (2003): *Das Wohnmodell inter-ethnische Nachbarschaft*. Wien, New York: Springer

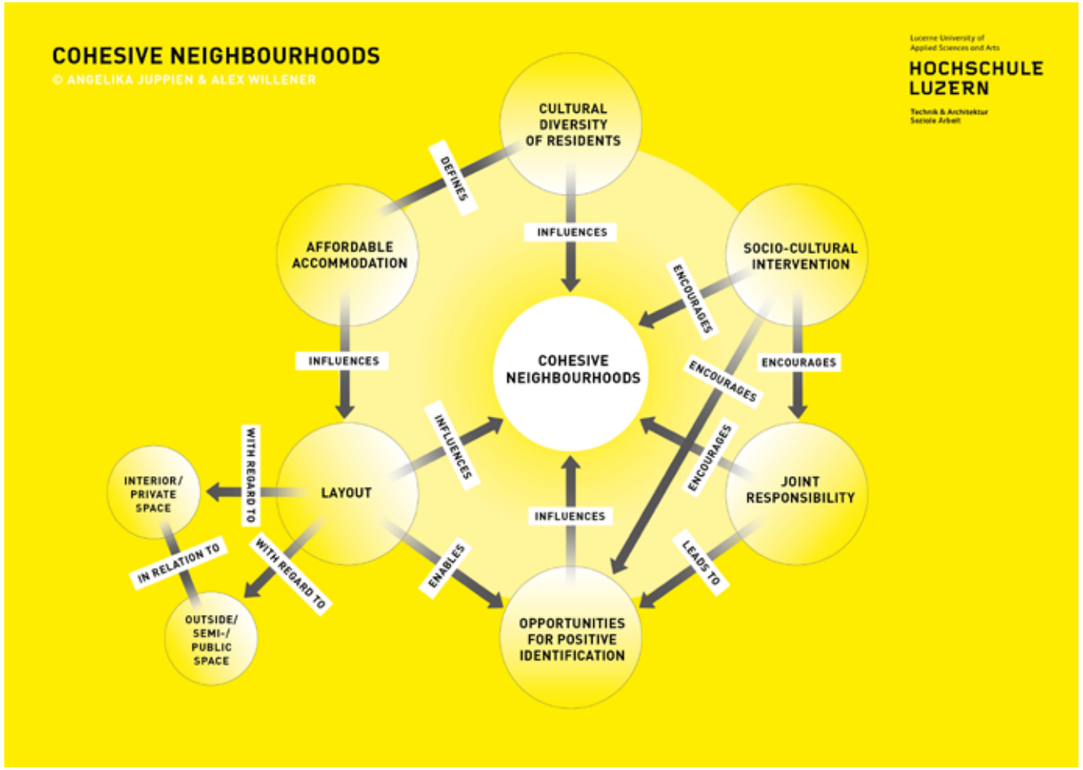
Perrone, Camilla (2011): *What would a, DiverCity' be like? Speculation on difference-sensitive planning and living practices*. In: Camilla Perrone, Gabriele Manella and Lorenzo Tripodi (2011): *Research in Urban Sociology* Volume 11, *Everyday Life in the Segmented City*. Research in Urban Sociology. Volume 11, *Everyday Life in the Segmented City*. Emerald Books

Pollak, Sabine (2011): *Wohnen und Privatheit. Materialien zur Vorlesung im Modul Wohnbau* 10/11. Wien: TU Wien

Thiesen, Andreas (2011): *Wie die Kultur in den Stadtteil kommt. Diversity Management in der Quartiersentwicklung*. Berlin: LIT Verlag

Thomas, David A.; Ely Robin J. (1996): *Making Differences Matter: A New Paradigm for Managing Diversity,* in Harvard Business Review, Sept/Okt. 1996, S. 79-90

Willener, Alex; Geissbühler, Dieter; Inderbitzin, Jürg; Ineichen, Mark; Meier, André; Spalinger, Nika (2008): P*rojekt BaBeL, Quartierentwicklung im Luzerner Untergrund, Einsichten - Ergebnisse – Erkenntnisse*. Luzern: Interact



Filippo Lambertucci
Università Sapienza Roma, Italy

Density. New frontier for post-soviet urbanism. Minsk Case Study

Post-Soviet cities inherit an urban tradition crystallised in the years between the post-WWII and the 1980s, in a pattern whose uniformity determined forever the figurative traits of the Soviet city. The obsolescence of the industrialised building systems adopted, and the opening by former Soviet republics to a market logic and to an ensuing pressure in a finally liberalised housing pressure, led cities to face a pressing need for urban renovation.
As in the past, the problem exists at the level of mass housing, since the large waves of buildings erected in the past decades with poor qualitative characteristics and without maintenance, now show at the same time the need for a radical upgrading and, therefore, although with different premises, the problem of mass housing reappears, even if this has become a mass of potential consumers, with space and personalisation needs that decades of standardisation had rejected in the name of a higher urgency to house urbanised crowds that were moved from one corner to the other of the Union.
On the other hand, density represents a relatively new topic in most of Soviet countries, especially if we think that in 1917 only 18% of the Russian population was gathered in very few cities, only two or three of which exceeded one million inhabitants.
However, the significant element is rather represented by the huge growth in the percentage of urbanised population that in 1939 already reached 33% and at the end of the 1970s reached 67%, this time related to USSR as a whole and,In the same period of time, more than 1100 new cities were founded in the USSR, with standardisation and industrialisation needs that can be easily imagined.
Housing becomes a mass problem, and will be increasingly faced in terms of industrial and logistic productivity; in the frantic process of improvement of standardisation, production itself will gain ground as an aesthetic category; the face of the soviet city will take on those precise and extensively recurring uniformity traits that will become the symbol itself of the city.
The modern researches of the avant-gardes in the 1920s and 1930s will finally give way to the achievement of Stalinist historicism and will succeed to only partially become, with distorted echoes, a town-planning standard practice in subsequent years.
If on the one side the Stalinist stylistic reaction zeroed genuinely modern inspiration, on the other side we have to acknowledge its attempt to plan the city not exclusively on standardisation, still trying to face the problem of the urban figure and of the specificity of its places, although in a way already and sufficiently stigmatised.
The permanence of blocks – although with huge proportions – perpetuates the plan of compact cities also in residential housing, also encompassing however the interest for the variety of single components including the attention paid to technical components (as witnessed by the so-called Burov's lace-building in Moscow (1941) at 27 Leningradsky Prospekt, outlining a possibility of ornamentations and variations which was later rejected).

Many users, one design.
Housing policies, and city policies in particular, completely changed their approach in 1955, after the decree of the Central Committee "On the removal of excesses in design and a construction", sanctioning the ideological elimination of the "decaying" criteria of ornamentations dating back to the Stalin period.
In this way Khrushev formally banished both the formalism and the model itself of the typical Stalinist city, and focuses on productive optimisation, by implementing a thorough functionalist approach from the building and town planning viewpoint.
The issue of housing is tackled from a merely numerical perspective, even with the excuse that post-war reconstruction urgently entails the need to house 25 million people, after the disruption of over 1700 cities and villages; accommodations are coded according to minimum size alternatives and to a zeroed aggregative range; the K-7 model ("khrusheva") was developed, a building with a 5 storeys to avoid lifts, made up of 3-4 staircases characterised by a basic prismatic volume deprived of any formal feature other than the grid of the facade panels.
The problem of housing is reduced to an issue of dislocation: the khrusheva blocks are standardised containers with which arithmetically distributing the population throughout the territory; density therefore becomes a problem of logistics that does not intend to take into consideration the quality of urban relations but in mechanical terms.

Housing as logistics
The poverty of aggregative variants reduces any variation of urban design to a criterion of distancing buildings and the rigid zoning of the (very few) non residential functions so, already in the late 1950s, the repetitiveness of schemes and the lack of care of the quality of spaces and of the endowment of services started to call the attention towards more complex solutions; the "Rules and Regulations for planning and development of cities" by Institut Gradostroitel'stva and the "Guidelines for planning and building of housing estates" (1959), introduced and defined integrated planning schemes for both housing and services, according to a "Russian doll" schemes of larger and larger areas based on which distributing the type and quantity of services for each catchment area.
In this way, the microrayon scheme appears, that is to say urban residential units of nearly 30/40 ha for a population of 10/12,000 inhabitants, endowed with primary essentials surrounded by large relief roads in order to avoid carriageable roads inside of this area; once ratified on the basis of the new approach implemented by Brezhnev in the mid-1960s, the figure of micro-rayon became the main feature of soviet cities.
Although based on free plan criteria, it only originated identical approaches in the entire USSR; a wider range will be offered through the introduction of buildings (brezhnevki) with 9/14 storeys, whereas the definition of public spaces and aggregations was still anchored to pseudo-functionalist standardisation criteria.
The characteristics of places never represent an element of concern for designers; the basic plan can undergo slight changes, but it fundamentally proposes detachment and dislocation factors that hardly reach characterising features.
On the other hand, the standardisation process of houses and their aggregation proceeds constantly towards forms of inexpressive repetition; there is a slight increase of per-head surface, whereas as far as the aggregation of houses is concerned, the line-shaped plan with unilateral apartments prevails.
Paradoxically, the most relevant parameters in shaping collective spaces are those of separations imposed by fire and solar radiation, but they rarely take into consideration possibilities deriving from a suitable exposure, to such an extent that sections are fine-tuned for a universal exposure.
Very rarely, the positions between buildings are far from the orthogonal one, in the same way as rarely the entire micro-rayon adopts exposures far from North-South and East-West or 45° rotations.
The quality of public spaces might be considered as the point of strength in a system in which the public property of the soil allows a total control over the design; however, as a matter of fact, this is only the guarantee that public spaces might be relieved from the degradation typical of systems in which "public" means belonging to nobody and not to all.
Micro-rayon represents an open system, in which the availability of public spaces is even excessive, especially if we consider that it is represented more by green spaces than by facilities, since, as it can be easily imagined, there are no private commercial facilities characterising the spaces of western "capitalist" cities.
In this way, the utopia of regulated, bright and open city, shared by several avant-gardes, is implemented; in this case, however, openness mainly translates into dispersion; the egalitarian utopia does not deal with the need for places' identity.
Therefore, the ground floors of building blocks will never host business activities overlooking the street, also because inside of the micro rayon, streets are not destined to float, but rather to walk to one's homes, and services as well are made according to rigidly coded models.
In this way, it's green areas that represent the connective system, with a potentially high level of quality but often needing to deal with incomplete implementation; what remains is therefore the images of a dispersed and dilated space, whereas inside of residential blocks density takes on the shape of the compressed and all equal spaces of accommodations, whose quality can only be measured in relation to the generation of the prefabricated systems with which they were made.
As a matter of fact, the history of prefabricated systems will define the history of housing itself: the problem of quickly housing masses of people, in fact, is not limited to the post-war emergency; conversely, it continues with different motivations and conditions – for instance, the amnesty that between 1953 and 1960 released 2 millions of people from the Gulags and 3 millions of people called back home from exile – still long fuelled by the huge flow of urbanisation of rural masses and by the continuous foundation of new industrial or mining cities (*monogoroda*).
The K-7 model of khrusheva therefore underwent several changes, but also many subsequent generations, each one updated according to the standards introduced from time to time, both from the dimensional and distributive, and from the technical viewpoint.
In this way, if on the one side the industrialisation of housing brings the net living space from 4.67 m^2 per head to a National average for every inhabitant of 5.30 m^2 in 1957 and 7,4m^2 in 1969 (U.S. NBS report 1969), from the view point of the offer in terms of typological variety, prefabricated systems do not allow any significant variations.
A delegation of the U.S. National Bureau of Standards, when visiting Moscow in 1969, recorded that: "*Standard design series are simplified to the point of eliminating planning options and systems interchangeability. (…) there are but twelve basic designs for apartment houses in all of the USSR. It is a stock plan: the height is fixed, the plan is fixed, and the exterior appearance is fixed. The one variation is the incremental length determined by the number of elevator stairs modules*".
As from 1969 the situation did not change that much; therefore, the history of Soviet and post-Soviet housing can be summed up in Four generations, starting from the second half of the '50s, after the known shift by Khrushev.
The first generation begins with the K-7 model and with II-35 and II-32; the second generation is developed in the second half of the '60s with models II-49, II-57, 1-605, 1-515; the third generation after 1972 develops models as P-44, P-3, P-55, KOPE, which, with very few variations, and together with some of the previous generation, are still produced nowadays, since the fourth generation is mostly made up of further variations that started to be produced in the second half of the '90s, called P-44-T, KOPE-M, P-3-M, P-46-M, P-55-M, etc, sold through on-line catalogues, where people can buy the apartment they like from the same companies that in the past were centralised factories of systems – such as DSK-, and today operate as private developers.

Post-Soviet real estate market
The changes that characterise the latest generations mostly consist in the development in height, reaching 17/22 storeys, and in a slight enrichment at the formal level, always however burdened by repetitions.
The introduction of colours and of some more valuable coatings, as well as the extensive use among last generations of bow-windows and semi-personalised solutions for the coping and the roofing, do not improve a building and town-planning offer that remained rather homogeneous also after 1992, and the passage to a market economy.
On the contrary, the opening to the market has generated a new wave of demand that led to confirm the resort to industrialised systems, whereas designers and new customers struggle to develop alternative solutions.
The new residential microrayon considerably increased, and the urban design did not perceive any difference; density increased, but the space between buildings remains uncertain, despite of the attempts to introduce variations.
In this situation, the need is felt to review urban models from different perspectives; on the one side there is the awareness of the cultural heritage made up of micro rayon, which especially at the academic and teaching level deals with issues as reconversion, redesign and technological upgrading, both in the field of buildings and in the case of public spaces.
On the other side, on the contrary, new settlement options are promoted, often in openly experimental districts, such as the Skolkovo Technopark and A101 Project in Moscow, the Ecopolis Akademia city in Ekaterinburg or Sunny Valley in Cheliabynsk, or by administrations or private developers interested in the contribution coming from the western urban experience.
The studies and the proposals put forward by western firms, that are access the post-soviet market massively, agree to reposition the city according to blocks; it is a proposal whose model is represented by the European historical compact city but that, obviously, has very different preconditions, mostly starting from the regime of ownership of the land: microrayons, in fact, represent the expression of the prerogatives of public ownership, expressed in the dilatation of collective spaces in which buildings are located as independent objects.
The block model is, on the contrary, belongs to "capitalistic" systems, in which private property organise itself at the intermediate scale of the block and consequently tends to hierarchize spaces.
Through the block, then, a different option of density is reintroduced, which is not anymore concentrated in large building elements disseminated in large green spaces, but rather it is redistributed in shorter buildings with a larger area covering the soil; separations and dispersed spaces are reduced, hence forming courtyards and internal spaces whose new status shall be entirely defined.
The new Strategic Master plan of Perm goes towards this direction; it was developed by KCAP Architects&Planners as from 2008, and grounds the main axis of its strategy on the process envisaging the consolidation and densification by blocks:
"*Enclosed or partially enclosed block surrounded from four sides by the city streets is taken as a base module of the urban fabric. The block in turn can be subdivided into clusters, also defined by perimeter. The buildings define configuration and hierarchy of the open spaces: public open spaces are located on the exterior perimeter of the block, while private open spaces are on the inside.*
The ambition of the Block Strategy is to improve the quality of the urban environment by giving better spatial definition to the blocks, private and public spaces, including streets. It aims to create an easy to navigate, comprehensive spatial network, with clearly articulated perimeter blocks as its key element."
Generally, although among several difficulties and oppositions, the new criteria of recognition of places and of the existing buildings are gaining ground, although still far from the implementation of a thorough site-specific planning and design.
The economic effort and the level of urban heritage on the one side, and the deep rooting of the approach of design in the ways and traits of standardisation make the process of revision building and urban culture in former-soviet republics slow and problematic; undoubtedly, it has to pass through a new awareness of both topological and cultural consistency factors with social and housing models that must be entirely reorganised.

Minsk case study
The case of Minsk, the capital city of the Belarus Republic, is not an exception in consideration of the features of post-Stalinist periods, whereas the post-war reconstruction plan of central areas, although the magniloquence of Stalinist historicism, is not free from topological and figurative sensibility.
The city had phases of massive urbanization on several occasions; in the first time the almost total reconstruction post-war in the '50s, while in the '80s Minsk becomes leader of the industrialized housing construction in the URSS, due to a fast demographic growth (from 700.000 to about 2 millions of inhabitants). The quantity of the dwelling houses built in a year came to almost two million square meters of living space. After a stasis between the 1991 and 2006, resumes fast a growth of an urbanization compulsive, generic, serial, repetitive and outdated in the criteria of design and function.
Faced with a monumental centre extend broad and generic areas condemned to be suburbs for their same nature of neighbourhoods predominantly residential, uniform in spaces and buildings, mechanical in the definition of the urban fabric.
The city and its surroundings, however, have a high potential in terms of landscape, due to the quality and consistence of the natural environment.
Along the pathway of a consolidated and poorly original tradition, the government launched a plan for the future development of Minsk, which will mainly occur through the creation of new satellite urban centres.
The proposal developed by LP.studio + ISSE Minsk ltd. for the master plan relating to three of these satellite centres falls within this line. A characterising theme was identified for each of them, with high-density models adapted to environmental frameworks very different from one another: the pole of tourism and of leisure time, the industrial district, the technological and conference district.
Each one of these districts will be characterised by multifunctionality and by a wide range of options in terms of urban services and equipment, as well as by the integration between landscape and erected city, finding for each district the right combination between four major parameters: infrastructure, density, centrality, landscape.
Infrastructures participating in the configuration of the environment, centres in which the population might be easily reflected and build the identity of a district, density as a figure of the settlement and, finally, landscape as a global reading key of the action principle.

In any case, the size of microrayons was considered as a starting reference point to develop neighbourhood units that citizens were already familiar with in terms of size and dynamics; in each situation this measure adopted configurations in line with the surrounding framework:
In the tourist district, close to the lake and the forests, buildings keep large sizes to define new landscapes with expressive formal configurations that can be modulated in order to protect themselves from cold winds and to frame privileged sights;
In the productive district the figure of microrayon is proposed again as an intervention unit, divided into parts surrounded by green bastions located with apparent freedom in the rural landscape, although re-elaborated in the compact figure of the block city with its streets and squares;
In technical pole districts, housing takes on less expressive traits, forming a sort of fabric of short and high-density residences, characterised by strong bio-climatic features.
The master plan therefore indicates three qualifying intervention criteria:
- identity: identification and inclusion of specific features of places (contexts) together with the search for typical elements and principles indicating the recognisability and the belonging of the population
- options: wide range of options from the typological and functional perspective, complexity and wealth of relations and interactions, mixed functionalities
- connectivity: there are no settlements without a suitable infrastructure system; connections must be controlled from the neighbourhood to the territorial level.
- sustainability: nowadays it is unavoidable to face at urban level the issues relating to environmental compatibility and energy awareness; housing shall comply with requirements as high comfort, low impact and high efficiency.

These criteria are all included in the micro-rayon tradition to give birth to innovative configurations for Belorussia, still recognised and assimilable by citizens and administrators.

Bibliography

AA.VV., *Esperienze e orientamenti dell'edilizia abitativa sovietica*, Edizioni Ente Fiere di Bologna, 1976

Cohen J.L:, De Michelis M., Tafuri M., *URSS 1917-1978, la città, l'architettura*, Officina Edizioni, Roma, 1978

De Magistris, A., *La costruzione della città totalitaria*, Milano: Città Studi, 1995

De Magistris, A., *La città di transizione. Politiche urbane e ricerche tipologiche nell'Urss degli anni Venti*, Milano: Il Quadrante, 1998

French R.A., Ian Hamilton F.E., *The Socialist City. Spatial Structure and Urban Policy*, John Wiley & Sons, 1979

Goldhoorn B.(Ed.), *Architecture after Communism*, A-Fond publishers Moscow- Amsterdam, 2002

Medvedkov, O., *Soviet Urbanization*, Routledge, London 1990

Petrignani M., *Pianificazione e industrializzazione edilizia nell'URSS*, Antonio Salzano Editore, Salerno, 1978.

Quilici, V., *Città russa e città sovietica: caratteri della struttura storica, ideologia e pratica della trasformazione socialista*, G. Mazzotta, Milano, 1976

Wright J.R. (Ed.), *Industrialized Building in the Soviet Union (A Report of the U.S. Delegation to the U.S.S.R.)*, National Bureau of Standards Special Publications 334, Washington D.C., 1970

2. Essay in the book

Engel, B. *Public space in the "blue cities" of Russia*. In Stanilov, K (Ed.) *The post-socialist city: Urban form and space transformations in Central and Eastern Europe after Socialism*. Dordecht, The Netherlands: Springer, 2007

Medvedkov, Y., Medvedkov, O. *Upscale housing in post-Soviet Moscow and its environs*. In Stanilov, K (Ed.) *The post-socialist city: Urban form and space transformations In Central and Eastern Europe after Socialism*. Dordecht, The Netherlands: Springer. 2007

Molodikova, I., and Makhrova, A. *Urbanization patterns in Russia in the post-Soviet era*. In Stanilov, K (Ed.) T*he post-socialist city: Urban form and space transformations In Central and Eastern Europe after Socialism.* Dordecht, The Netherlands: Springer, 2007

3. Magazine and conference proceedings

Altrock U., *The lost centre: Magnitogorsk revisited*, in: «Journal of Urban Design», Volume 3, Issue 2, 1998

Bronovitskaya A., *Open City: The Soviet Experiment*, in: Volume 21, The Block Archis Publishers, Amsterdam, 2009

KCAP Architects&Planners, *TRANSFORMING THE CITY - Perm Strategic Masterplan*, Perm City Administration, City Projects Bureau, 2010

Gentile M., *Studies in the Transformation of Post-Soviet Cities. Case Studies from Kazakhstan*, in: *Geografiska Regionstudier*, n° 59, Uppsala, 2004

Goldhoorn B., Sverdlov A., *Microrayon: Transformations of the Soviet City Under Capitalism*, in: Volume 21, The Block. Archis Publishers, Amsterdam, 2009

Goodrich Lehmann S., Ruble B.A., *From 'Soviet' to 'European' Yaroslav: Changing Neighbourhood Structures in Post-Soviet Russian Cities*, in: Hahn J.W., *Regional Russia in Transition: studies from Yaroslav*', John Hopkins University Press, Baltimore 2001

Masshtab Company, *Project A101, a suburb in the European style adjacent to Moscow*
http://www.a101.ru/master-plan.xml

PROJECT RUSSIA n.55 - 2009– *Housing*, A-Fond Foundation publishers Moscow- Amsterdam
PROJECT RUSSIA n.56 - 2009– *Perm*, A-Fond Foundation publishers Moscow- Amsterdam
PROJECT RUSSIA n.25 - 2003– *Microrayon*, A-Fond Foundation publishers Moscow- Amsterdam

Renova StroyGroup, *Ecopolis Akademia City – Project Summary* , Ekaterinburg
http://www.renovasg.com/projects/complex/academ/akadem_project/

Renova StroyGroup, *Sunny Valley, Chelyabinsk*
http://www.renovasg.com/projects/complex/sunny/

Robinson, J. *The Post-Soviet City: Identity and Community Development, Presented at City Futures in a Globalizing World: An International Conference on Globalism and Urban Change.* June, 2009. Madrid, Spain.

Skolkovo technopark: http://www.sk.ru/

Zadorin D., *Microrayon Handbook*, , in: Volume 21, The Block Archis Publishers, Amsterdam, 2009

Legenda

1_Housing landscape: late '60's (left) and today in Moscow (right)
2_Microrayons in Soviet cities: same orientation, same dimensions, same spaces.
3_LP.studio Lambertucci+Posocco & ISSE Minsk ltd. – Megapolis Minsk Masterplan, 2010-12; new satellite district designed by a theme: tourism and leisure (above), industry and transports (below)

Luca Lanini
DAPIT, Università degli Studi della Basilicata, Italy

Unitè 2.0: Housing in time of Austerity

Foreword

Architecture needs a reality check. Cities need a reality check. Most of all, architects need a reality check.
2010 is a benchmark date: the *Credit Crunch* and the following *Sovereign Debt Crisis* have swept away optimism and faith in global economy raised in the '90s and '00s.
As the Great Recession dawned, glamorous architectures were spreading all over the world, it didn't matter if the countries that would pay for them could afford it or didn't. Grandiose signature buildings that often contribute to skyrocket the stellar debt of the nations that built them; multimillion euro buildings drew not only specialized press attention but a new form of tourism once dedicated to the European "towns of art". And, most of all, archistars like Zaha Hadid, Rem Koolhaas, Frank O. Gehry became overnight the darlings of every politician seeking for re-election.

Few, monumental buildings drew interest, press and capitals as the European housing programs and politics (with few exceptions: Spain and Netherlands and, to a minor degree, Germany and France) grinded to an halt. A sort of an Aldo Rossi's post-modern theory revenge: build "the Monument", forget about the rest… The rest meaning new houses for the less wealthy strata of society -the 99 per cent-, urban spaces and public services in a surreal, suicidal betrayal of modernist values based on a more decent housing and a more efficient urban living[1].

Then, reality kicked in… Architecture is exposed to the reality of marketplaces like few other fields. The sense of ongoing optimism dissolved as the American Housing Market crashed and turned the world economy upside down. Let's stick to numbers: " according to the U.S. Department of Labor, employment at architectural firms nationwide dropped from 224,500 to 184,600 between July and November of 2009, and the numbers have kept falling. In some cases, firms went dormant while remaining open. Gensler, the nation's biggest firm, laid off 750 of a staff of about 3,000; British Pritzker-winner Norman Foster laid off a quarter of his. Gehry – whose Brooklyn Yards project and condo/shopping hybrid in downtown Los Angeles wilted – cut Gehry Partners to ribbons, slicing more than half his staff of 250. All over the world, even in once-vigorous regions, ambitious projects stalled. That process has continued: In November, Gehry saw the projected Guggenheim Abu Dhabi museum go into deep freeze."[2]

We do not have reliable data about the architectural European market, but the occupational drop could be even more severe and in each and every European countries we can directly expertise how major development projects stopped or have been deeply reduced.

Why? Architecture, housing and infrastructures have always been economy uplifting instruments in time of crisis and recession. Architects have always been the major actors in establish new goals in urban development and in doing that they drew cities and countries out of the periodical crisis.

It had happened before, let's think about the first postwar age in Germany and what happened after the Second World War in Italy, when a new generation of architects and technicians drew the country out of misery, redesigned the national urban and rural landscape and the real estate market (as well as the famous Italian design) propelled the great economic boom of the Sixties. Will it happen again?

Architects as "creative, leading class" have been largely decimated by the current depression. As we have told before, they were at least co-responsible in designing and backing up expensive, self-refential and overblown buildings. As Rem Koolhaas would say, they ride and surf the Groβstadt market wave. They even fed it in a cost-growing spiral hype. Now, as "creative, leading class", they seem useless and clueless[3].
Karl Marx once wrote: "it exists what is useful". Architecture is an expression of our primal need to reshape our environment, and it takes many forms and serves many kinds of clients, a diverse picture not always reflected in the media, which tends to focus on the extremes of "star" architecture[4]. Though, it exists an European strong tradition of socially conscious, collective, community projects overshadowed by big buildings and programs. Architecture for the 99 per cent. That's what we need now!

Towards a Low Cost+High Efficiency Housing

2010 is a benchmark date for another reason too: for the first time in human history urban population has outgrown rural population.
European economies and cities can't sustain anymore the extensive land occupancy, the expensive infrastructures, the energy inefficiency, the pollution, the wasteland of public spaces, the lacking of diversity and multifunctionality of the existing housing settlements.
Moreover, we are facing an indiscriminate land occupation and the conversion of the countryside into suburbs, a process that is radically changing the face of the European cities and landscapes, with the promise of a single-family home and green prairies often turning into a nightmare of traffic congestion and lack of facilities and urban living. Welcome to the new European Wilderness…[5]

Not only a part of Western population can't pay the mortgage on their first house anymore, but even if they can, it will be a very bad investment. To quote a popular phrase in the stock market: "never put good money on bad money"…
Our *Safe European Homes* (well, most of them) are expensive, inefficient, energy-consuming, too big, without a proper lay-out, not designed for modern uses and actual families.
In one word: they are OLD.

In a rebuke of the fascinating Le Corbusier's metaphor, "house as a machine for living", we can say they are trying to sell us an American car of the '70s: so big you can park it nowhere, it runs only 5 km per liter, so ill designed it has no appeal and it is difficult to drive, so expensive you can't afford it in the long run. And this is a major setback for the architectural community, of course.

But, on the other hand, how can we architects mend the terrific effects we sorted out with the collective house programs of the '60s and '70s and the failures of their public spaces? How can we manage to made collective housing affordable and worthwhile and, in some degree, fascinating. In an age when the price for square meter for an apartment is more expensive than that of a single-family house? In an age where there is not apparently need for public facilities because everything is on the internet? In an age where private transportation makes dispersion ever easier? And, moreover, how we architects can face and give form and sense to all those changes?[6]

Listing the main changes housing has faced in the last twenty years:

1_First of all: there's no money left…
2_The transformation of the family unit, with a predominance of couples without children or with few children.
3_Extension of life expectations, that means more elder couples.
4_The progressive substitution of the classical notion of "coexistence" –shared behavior- for that of "cohabitation" a merely spatial contract (not relationship- capable of favoring the independence of both varied kinds of action and behavior and changing individual needs).
5_The growing dimension of marginal collectivity (increasing rate of unemployment, new forms of povertiy, immigration, refugee).
6_The constant fluctuation of the labor market and the associated feeling of the instability of any work, with the consequent difficult of long term economic planning and the end of automatic access to privately-owned housing. Many jobs have been repositioned in-house.
7_The gentrification of many European neighborhood with the closure of the diffuse space of facilities at the urban (and street) level as bars, restaurants, sports clubs, leisure centers.
8_The increasing "joint participation" of the active members in the domestic economy and the consequent need for reduced domestic tasks, which would figure a new concept of those spaces .

So, urban sprawl and detached houses neighborhood, apart from being unsustainable, reflect a way of living no more compelling and affordable. The working process is radically changing (if you still have a job…), as well as the profile and the composition of families.
We are interested in new typologies of low cost/high efficiency collective housing projects including non-residential uses that can be opened to the whole neighborhood.
Hybrid buildings as a sort of *Unitè d'Habitation 2.0.*
The actual houses are no more suitable because:

1_ Are too big (designed for '70s or more remote type of families).
2_ Are detached (costs too high for land, infrastructures, maintenance because they can't be split up).
3_ Are designed for generic residents, with rigid and not updated spaces and typologies.
4_ Are built with traditional process and materials.
5_ Are not energy self-efficient.

We are interested in designing new typologies of low cost/high efficiency collective housing projects including non-residential uses that can be opened to the whole neighborhood.
We are interested in Hybrid buildings that we call *Unitè d'Habitation 2.0.*
As Manuela Raitano said in her poster: "*Housing is a qualified urban facility*. As a sort of *upgraded Unitè* implemented to respond to a double scale of needs, ones of the inhabitants, others of neighborhood, housing can avoid a sense of closure and *expand urban vitality*, at the very opposite of the duality of 'fabric' and 'monument'"[8].
The model for the shape of things to come is Le Corbusier's Unitè d'Habitation.
Le Corbusier's Unitè d'Habitation is a sort of monumental entity in the contemporary architectural history. It's conceived as a giant problem solver in the European reconstruction strategies after the Second World War. It was presented like a sort of logical and direct aftermath of a series of diagrams concerning density, plot areas and ground consumptions.
It was obviously brilliantly designed and cleverly merchandised. A sort of ocean liner suspended on beton brut pillars, floating in the European Countryside. The roof is its main deck with all the facilities the community of its inhabitants need. The city street is taken away from the ground and in a typical genial avangarde move it's placed in the middle of the building. Its ancestors are in the Constructivism realms of collective housing designed by Mosej Ginzburg, its heirs are in the informal ryzomatic experiments of Team X.

Looking back critically at Corbu's masterwork, we can arguably list its biggest blows, despite its unalterated status of modern classic and inspirational work:

1_ Placed in a metaphysical plan, a sort of theoretical *tabula rasa*, it do not interact with its surroundings except with other identical buildings.
2_ As said above, it happens for the facilities too. They are reserved to the community of the *Uniters*, not for the whole neighborhood. It creates a secluded community.
3_ Residential typologies are few and not so-different, they are designed for a general, nonexistent client.
4_ Houses are very rigid and can't afford a substantial makeover if it is needed.

The Unitè d'Habitation 2.0 should outline those principles:

1_ Residential Density higher than those used in their settings. Their compactness make them outstanding architecture landmarks and in doing so, saving land, infrastructures and maintenance costs.
It needs to reach a critical mass to get economies of scale in a noteworthy metaphor of the size attainable by the building.
A sort of advance urban artifact, Le Corbusier would name it *Outil*. *Architecture for the city instead Architecture of the city*, buildings actually dissolving the stale difference between "monument" and "fabric".
2_ Energy self-efficiency: "Class A" building, "Carbon Neutral" Building, Solar Systems for water and energy, Passive systems for the constructive systems.
The traditional "heavy" enclosures based on massive wall system has been overlooked by "light" ones based on "dry" materials as metal sandwich or multilayered wood derived panels as well as cement-based, and or fiber-composite ones.
High inertia architectural skin is often coupled with radiant floors and/or ceilings to make generally more efficient the overall systems of installations.
The architectural aftermath is that the façade is conceived as heavily layered, gaining a transitional width filtered by sliding shutters, panels or blinds.
So the building gets a new blurred and luminous aspect in a process that is apparently deeply rooted in the contemporary architectural sensibility and languages.
3_ Residential Flexibility: flexibility of typologies and measures of the residential units to encounter the fluctuation of the survey and variations of the users; interior flexibility of the unit to modify it just in time and made it custom made; flexibility in their cost to assure a mixed class and cultural environment resulting in groups of residents of different ages, origins, interests and resources.
Flexibility rather than specialization, that means a new versatility of the residential spaces. And it can be obtained with technical (great span structures, concentration of the technical modules as well as diffusion of the energetic and plants network) and conceptual strategies (great open isotropic spaces, ready to different plot of use and occupation). A more fluid and transformable residential space can be obtained with improved division systems based on industrial and serial elements, typical of the architecture of the office interiors, perfectioning a lay-out which improves accessibility, visitability and adaptability for people affected by physical or psychological diseases. Another score for the *Plan Libre*![9]
4_ Common areas and residents facilities: pool, gym, kindergarten, workshops, wi-fi areas, 24 hours laundry etc to build a new sense of community and civic conscience. The desertification of the urban roads (look at the streets of Athens!) or the lack of any facilities in many of the European suburbs aim towards the inclusion of some of those artifacts of the contemporary life inside the building, actually attaining a semi-public status if part of those facilities are opened to the neighborhood, becoming an untamed areas of social and cultural hybridation to try and lower the global phenomena of marginality and conflicts affecting western cities, collective meeting places inside the building[10].
5_ Prefab constructive systems and elements to cut construction and then house price short. A contemporary constructive system optimizing the value of repetition but do not deny the identity of the individual user, eliminating debris in the construction and reducing execution time, allowing us more precision, versatility, velocity in the construction process.
"Light" prefab system based on the tactic use of modules for plants and networks instead of "hard" prefab system based on the repetition of complete cellular modules.
The repercussion on construction costs has been calculated in its lowering around 10 per cent, allowing an increase in the interior surface or a higher quality finishing[11].

This is not a new issue for architecture and cities. Not at all. Let's think about the aforementioned post wars experiences in Europe: *Die Rote Wein* and Ernst May in Frankfurt, Hilberseimer and Le Corbusier. Architects saves themselves from ineffectiveness and uselessness when they are able to face and solve and translate in new forms and advanced technologies people's requests and main society challenges, translating in a slightly better life for the inhabitants of our cities .
Antonio Gramsci once said: "They call it crisis, we call it opportunities". The present crisis is not only the default of the authorial, oversized, over costly architecture. It is a great chance to rethink the fundamental goals and the theoretical instruments of our profession.
Architecture will be refunded if it is looking for a new and more decent way of living, here and now. And a new way of living means new forms for contemporary housing with new technologies and new environmental sensibility.
Back to the basics, heading to the future. Once Ernesto N. Rogers wrote: "A house is not a house if it is not warm in winter, cool in the summer, calm in any season and with harmonious spaces which welcome the family. A house is not a house if it does not contain a corner to read poetry, a bedchamber, a bath, a kitchen. This is a man's house. I want a house which resembles me (the best of me): a house which resembles my humanity".

The challenge is to build this house for each and every one.

Luca Lanini
DAPIT, Università degli Studi della Basilicata, Italy

Notes

[1] Timper, *Architecture Meltdown,* in “Salon”, Febbruary 2012, http://www.salon.com/2012/02/04/the_architecture_meltdown/

[2] Ibidem.

[3] Anderton, *Seeing a Bright Side to Architecture Meltdown*, in “Planetizen”, February 2012, http://www.planetizen.com/node/54404

[4] Ibidem.

[5] Per, Mozas, Arpa, *D book. Density, Data, Diagrams, Dwellings*, Vitoria-Gasteiz 2007

[6] Ivi.

[7] Gausa, *Housing. New Alternatives. New Systems*, Barcelona 2003

[8] Raitano, *From Architecture of the City to Architectures for the Cities*, Milan 2012

[9] Per, Mozas, *Arpa, Density is Home*, Victoria-Gasteiz 2011.

[10] Per, Mozas, *Arpa, Density Housing Construction & Costs*, Victoria-Gasteiz 2011

[11] Gausa,. *Op. cit*.

Bibliography

Anderton, *Seeing a Bright Side to Architecture Meltdown*, in “Planetizen”, February 2012, http://www.planetizen.com/node/54404

Gausa, *Housing. New Alternatives. New Systems*, Barcelona 2003

Per, Mozas, Arpa, *Density is Home*, Victoria-Gasteiz 2011.

Per, Mozas, Arpa, *Density Housing Construction & Costs*, Victoria-Gasteiz 2011

Raitano, *From Architecture of the City to Architectures for the Cities*, Milan 2012

Timper, *Architecture Meltdown*, in “Salon”, Febbruary 2012, http://www.salon.com/2012/02/04/the_architecture_meltdown

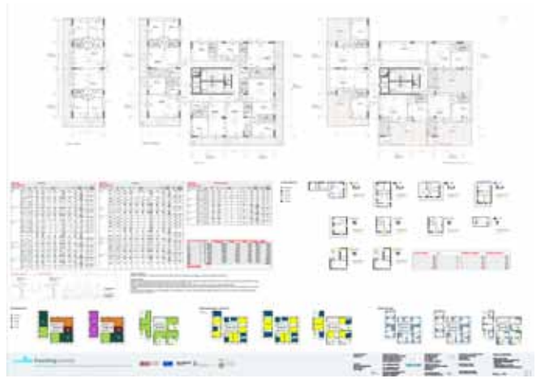
Legenda

1_ Lanini e Raitano Architetti Associati, Low Cost High Performance Housing in Milan, 2011, Project 1

2_ Lanini e Raitano Architetti Associati, Low Cost High Performance Housing in Milan, 2011, Project 2

3_ Lanini e Raitano Architetti Associati, Low Cost High Performance Housing in Milan, 2011, Project 1, Typical plan

4_ Lanini e Raitano Architetti Associati, Low Cost High Performance Housing in Milan, 2011, Project 2, Typical plan



Gérald Ledent - Olivier Masson
Université Catholique de Louvain, Belgium

Living Utopia – Leaving Utopia Brussels: Modernist Urban Forms Evaluated against Pre-Existing Row Houses

Introduction
The urban forms in which residential settlements assemble are part of the city that they shape at the same time. Variations in the forms of housing have thus a direct impact on the transformations of cities. Collective modernist housing produced one of these urban forms. Housing slabs or towers that were once the symbols of a progressive utopia, often turn out to be a mere *chimera*. Nevertheless, reintroducing such urban forms is at the heart of many debates in European cities, among them, Brussels[1]. Their potentials and faults should, therefore, be acknowledged.
In Brussels, collective modernist housing is seen from an exclusive benchmark since it is confronted with a radically different solution, the individual row house. Contrary to other European cities[2], there is barely any transitional housing configuration linking the traditional row house to the modernist housing solution. In addition, traditional Belgian commitment to private propriety has widened this discrepancy even further.
This paper is organised in three different chapters. Firstly, it expounds the essence of dwelling and how its variations can alter cities. Secondly, it illuminates a specific theme of the modernist rupture: discarding at the same time both material/technical implementation and societal conventions. Eventually, the urban consequences of the modernist housing solution are assessed on the basis of its local comparison to Brussels' traditional housing configuration. Specific dwelling qualities are examined in the light of this comparison.

1 Structures of correspondence
Dwelling consists of two simultaneous realities, house and home. House is the built dwelling artefact while home represents its ineffable qualities. The quality of dwelling emerges from the mutual adequacy of the two dimensions. (fig. 1)

Let us call '*structure of correspondence*', the reciprocal association between house and home, spatial and social structure. The concept combines space and place. (fig. 2)

A *structure of correspondence* is a built artefact fostering human needs. It is a physical support for dwelling.
In addition to being a physical support, *a structure of correspondence* embodies a conventional system which meanings depend on temporal or spatial circumstances. The conventional system – code – is formed by the different meanings shared by a particular group. In order for conventions to be meaningful, members of this group must have the competence to recognize and understand them. Conventions are thus primarily social. Hence, they are a recognition sign of sociocultural positions within society.
Within *structures of correspondences*, considering built artefacts leads to introducing the notion of relational potential as the specific qualities of house to support home. *Relational potential* can be defined as the capacity of artefacts to foster socio-cultural conventions. (fig. 3)

Structures of correspondence can evolve through changes in the constructing of either home or house features. On the one hand, technical developments distort and create new physical artefacts. The new artefacts influence social codes which in turn are modified. On the other hand, conventions themselves can evolve. In return, they affect physical structures that develop consequently. (fig. 4)

As a consequence, four cases of dwelling evolutions are encountered: from house to house, from home to home, from house to home, and vice versa. Local dwelling evolutions can thus be depicted in the form of a tree diagram. Some branches are abandoned[3] and left aside for a while. Usually only one survives, featuring the referential *structure of correspondence*. Such a diagram could be drawn for any human settlement.
Since housing forms the major part of cities, alterations in *structures of correspondence* directly affect cities. Hence, city changes can occur through modifications in physical structures (evolution of construction, transportation techniques …) or socio-cultural conventions (philosophical, cultural and political revolutions …) of housing. (fig. 5)

2 Modernism
What makes modernism in architecture unique is the simultaneous unsettling of construction means - materials and techniques - and sociocultural conventions[4]. It is a pivotal moment in the transformation of cities since modernist solutions allow no more continuity in either the house or home dimensions. They disrupt at the same time both constituents of mainstream *structures of correspondence.* (fig. 6)

Yet, the tabula rasa advocated by modernism is seldom physically or conventionnaly effective. Therefore, most modernist projects arise in culturally 'loaded' contexts since pre-existing *structures of correspondence* do not disappear instantly. Therefore, the wishful disconnection of modernism from local conditions is never entirely successful. Local conditions - conventional *structures of correspondence* – give modernism a new perception, thwarting its universal purpose.
Hence, similar housing solutions carried out in Berlin, Paris or Brussels are not experienced the same way. Therefore, confronting local *structures of correspondence* unveils the potentials and faults of modernist projects. In return, collective modernist housing becomes a 'seeing tool', in Daniel Buren's sense: its serial aspect reveals evidence about its emerging context.

3 Case Study: Brussels
Modernist housing can be questioned in terms of its *relational potentials*. Those *relational potentials* are tested against the artefacts of the local referential *structure of correspondence*. In Brussels, the middle-class row house produces this referential *structure of correspondence*. (fig. 7)

Until the end of the 18th century, Brussels remains a minor town, confined within a second belt of city walls. In the 19th century, its role increases[5] and the city expands rapidly. Many cities in Europe undergo a similar growth. Yet, Brussels is unique since it develops around a specific housing solution: the individual middle-class row house[6]. Individual houses were achievable because of their adequacy to bourgeois lifestyle and inexpensive plots. Today, more than a quarter of Brussels' dwellings[7] are built according to this typology. Moreover, it represents over half of the residential ground occupancy[8]. Hence, it is a standard by which all residential solutions are measured.
After the First World War, two different housing solutions are carried out. On the one side, garden cities are built in the suburbs, but remain a limited development both in time and magnitude. On the other side, collective housing is introduced in the social and private markets in the late 19th century. Yet, it only becomes representative starting in the 1930's as a result of the 1929 crisis and the development of the elevator.
Modernism develops in Brussels after World War II. A new urban form arises: collective detached high-rise housing. Belgian authorities massively support this kind of large scale collective housing in the social and private sectors. It develops into a major urban form in the 'second crown' of the city but also within the ancient urban fabric. 15% of the Brussels dwellings are built according to this housing solution and it represents 7% of the residential ground occupancy [9].

3 1 The Bourgeois Row House (fig. 8)
The bourgeois row house develops from a long sedimentation of techniques and uses. In the 19th century, it can be considered as a *structure of correspondence* since it is both a spatial arrangement and the reflection of Belgian socio-cultural conventions. Its spatial artefact can be typified by a limited collection of physical characteristics. Although conventions evolve, specific *relational potentials* are harboured in these physical characteristics. (fig. 9)
The first feature of the bourgeois row house is its unwavering connection to the urban block. It produces a clear boundary defining public space. Individual dwellings are fostered in the depth – ten to fifteen meters - of this boundary. Housing contiguity is governed by party walls that are, on average, six meters apart. They extend outdoors to delineate private gardens. Cumulatively, the gardens form an interior compound, shared only visually by the inhabitants of the block. As a result of the clear block boundary, two *relational potentials* are developed. On the one hand, every housing unit takes part in constituting public space. On the other hand, front and rear positions are created within the houses.
The maximum height is the type's second characteristic. Row houses culminate at a height of ten to fifteen meters, in direct proportion to the width of the streets. This height is a threshold above which sensory relationships are no longer possible[10].
Regarding height, the bel étage, the first inhabited floor, is raised by a half to two meters above the street level to enhance privacy.
The third feature is the type's fierce individual aspect. It sustains individuality (or family community). If the house was designed for single families with domestic staff, the individual character is not lost when it is inhabited by several households since they are always limited in number.
Finally, the last physical constituent is the function-free internal layout. It is based on a double division. The first one is longitudinal, dividing the building into two uneven parts (1/3, 2/3). The second division is parallel to the street. It partitions the house in two to three equivalent segments, creating adjoining rooms. Those divisions produce an implicitly shared layout with two distinctive kinds of rooms in terms of proportions that have no predetermined functions.
Personal variations are built around those common ingredients. They vary in terms of style, uses and measures, yet sustaining identical *relational potentials*. (fig. 10)

3 2 Modernist Housing (fig. 11)
Several criteria define the majority of collective modernist housing in Brussels[11]. Obviously, they fulfil residential functions. Secondly, they display a minimum height of six floors. In addition, they are independent from the constituents of the traditional city (streets, blocks and parcel divisions). Finally, their shape is clearly circumscribed (towers and slabs).
Collective detached high-rise housing is set in a specific context, Brussels. Therefore, it challenges pre-existing *structures of correspondence* which, in return, give it a particular perception. The two housing configurations diverge on the basis of the four constituents of the traditional row house. The discrepancies and their modernist resolutions reveal the specificity of the modernist housing structure in Brussels, highlighting its *relational potential*. (fig. 12)

While the bourgeois row house is intimately entwined with the urban block, modernist housing discards the block. The public realm boundary is dismissed; hence inhabitants no longer directly participate in generating public space. In addition, they are permanently exposed, as front-rear oppositions disappear.
Regarding greater heights, modernist housing no longer focuses on sensorial relationships. Different positions with regards to exterior articulations are now made possible. New heights enable inhabitants to enter into abstract relationships with distant neighbourhoods. As a consequence of height, many housing buildings become (monumental) landmarks in the cityscape.
Modernism no longer believes individuality can be a sustainable solution. Collective solutions are proposed. They unveil questions such as how to apprehend the dimensions of one's dwelling. Furthermore, where individual housing was firmly rooted in the ground, the collective nature of this modernist configuration makes it impossible. In return, communal living is a unique opportunity to create shared spaces.
Finally, interior layouts are poles apart. While individual houses were designed according to conventions, modernist housing relies on functions. Row houses are customized from common ingredients. Modernist housing allows no variation in repetition. In addition, a diverse range of floor plans is created that span from open spaces to precisely designated areas, creating no equivalence around a shared spatial layout.
The variety within the discrepancies of the modernist models accounts for their novelty and fumbling nature, thwarting the recognition of a unique and recognisable *structure of correspondence*.

3 3 Urban Forms
Regarding the transformations of cities, the dismantling of the urban block is the major distinction between the two urban forms. First of all, the configuration of the row house is central and inseparable from the city's development. Modernist housing solutions are exceptions[12] and never drove the city's expansion . Furthermore, as mentioned, modernist solutions create new urban conditions. No more perimeters are created by buildings. Hence interior compounds and front-rear positions disappear.
The creation of new configurations unveils *relational potentials* that can foster new urban conventions.
The lack of interior domains is replaced by free peripheral spaces. Centripetal spaces are replaced by centrifugal ones.
Two solutions have been developed to respond to this new urban situation. On the one hand, no physical limit separates the public and private realm. Within this scheme, two building arrangements are encountered. The first one lifts the bulk of the structure on stilts in order to free the ground. The second one maintains the building on the ground. In the absence of clear boundaries, no residential function is encountered on the ground floor. This is also the case on the street side of the traditional row house with the elevation of the *bel étage*.
On the other hand, some projects feature a physical boundary between the public and private realm. Some domains are rounded by a border of low walls, hedgerows and fences while a second series of buildings are set on a base, creating a natural setback from public spaces. In these two cases, accesses to the peripheral space are limited. Boundaries can be crossed at a few designated places but never unconsciously. In the presence of clear boundaries, residential functions are found on the ground floor.
In addition, in some cases, the free space is a contemplative one, recalling the character of the block's interior compound. (fig. 13)

Front-rear oppositions vanish in most cases of collective modernist housing. They are treated very differently from one building to another. The generic rule is that there is no rear - concealed - façade anymore, leading to new confrontations within the city. (fig. 14)

Modernist architects propose various means to articulate buildings with their surroundings. Redefining an explicit building orientation is one of those means. There is, then, a clear opposition between the two long sides of the buildings. In other cases, buildings are designed as isotropic and do not respond to any exterior condition but that of the sun. Pilotis or towers reinforce this feeling of isotropy. (fig. 15)

The building orientation influences this stance tremendously. Indeed, North-South oriented buildings usually contain symmetrical mono-oriented apartments. Hence, they display similar façades even though the two positions are experienced differently. Contrarily, East-West oriented buildings generally propose through apartments to avoid North mono-orientation. This creates two opposite building - façade - positions between reception areas to the South and intimate functions to the North. Contrarily, traditional row houses are not affected in their composition by orientation. (fig. 16)

Another means set forth to articulate the inhabitants' intimacy is detected in the façades and their associated exterior spaces. Once again, various solutions are encountered. They range from two separate exterior spaces to none (plain glazed façades). Generally, in the case of two distinctive exterior spaces, different qualities are at stake. While a first exterior space relates directly to the living room and is very much open and light-flooded, the other one relates to the kitchen or another service room. The latter is generally hidden behind permanent enclosures such as shutters and screens. Their proportions are opposite, 'service' balconies being narrower and largely perpendicular to the façade. In the case of single balconies and terraces, two options are encountered. The first one combines two different zones within the exterior space, merging the qualities developed in the two-balcony solution. The second solution, probably the most common within collective detached high-rise housing in Brussels, displays single continuous cantilevered terraces. They do not distinguish different areas. (fig. 17)

The loss of the block's watertight boundary dismantles urban standards such as the dwellings' positions and articulations regarding public spaces as well as their conscious contribution to the construction of those public spaces. Modernists strive to invent them anew by combining three elements: limits, orientation and permeability. Limits allow distancing; orientation allows differential positions while permeability allows concealment. Yet, no generic solution has been developed that reaches the subtle *equilibrium* of the city block and, often, gimmicks are needed to counterbalance the shortcomings of architecture (canisses closing off transparent railings, prohibition signs, improvised concrete elements blocking out accesses …).

Conclusion
Modernist architecture has attempted to dodge cultural frameworks by rethinking housing in terms of biotechnical needs. Yet, 'living utopia' was rarely achieved since no context is ever culturally blank. Consequently, modernist housing experiences are evaluated against pre-existing housing *structures of correspondence*, giving them a particular meaning. This dialogue is a

chance to grasp the potentials of modernist housing in shaping cities. For this purpose, the concepts of *relational potential* and *structures of correspondence* are particularly fruitful since they enable us to summarize housing solutions and test them on their minimal and necessary features.
In Brussels, there is barely any intermediate housing solution. Therefore, the contrast is sharp between the two housing configurations. It is such that it stigmatised modernist housing. In response, post-modernists produced low-rise housing configurations.
Modernist solutions differ in all four respects with the *relational potentials* developed by the traditional row house.
With respect to urban features, the modernist swipe of the spatial constituents of the city block has two major effects on housing and the constitution of cities. On the one hand, individual housing no longer takes an active part in producing public space. On the other hand, no retreat position is available anymore.
Those issues are no longer addressed by urban forms but by architecture itself. The comparison around the Brussels block reveals three key features addressing these issues: limits, orientation and permeability. Every arrangement of these features creates a genuine architectural proposal. The balance of this combination produces a relational potential, enabling appropriation by its inhabitants. This balance determines the cost of dwelling - the social, cultural, moral, psychic or material effort needed by inhabitants in order to dwell 'properly'- by which dwelling should be assessed.
Yet, while conventional *structures of correspondence* have developed over long periods of time, modernist housing was almost instantaneous. It proceeded from unique and diverse experiences to reinvent housing. Their *relational potentials* need to be understood and classified to assess their relevance to specific housing and urban needs. Only then can we 'part with utopia' and understand its real benefits for housing.

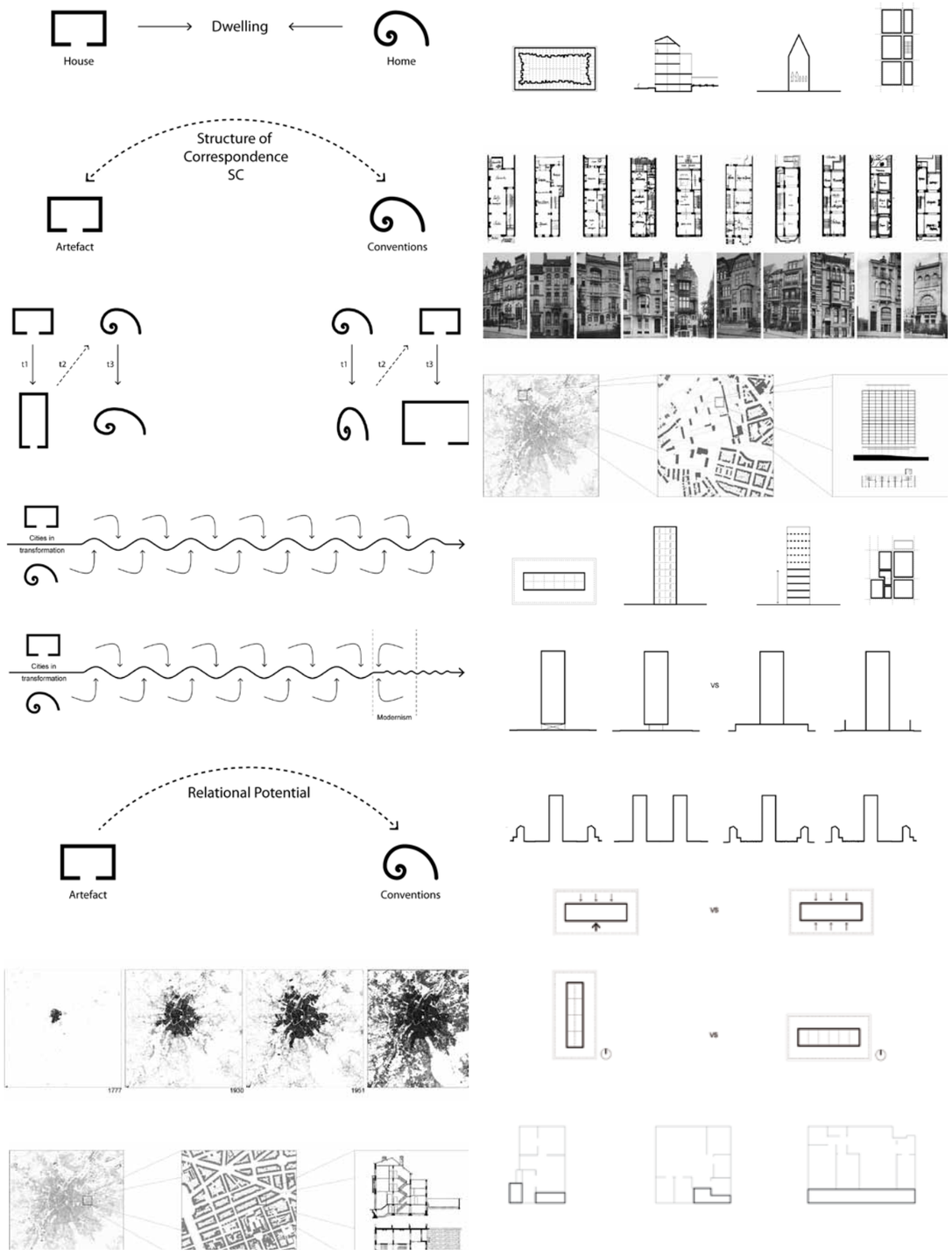
Notes

[1] Brussels authorities have commissioned various debates and studies on the opportunity of reintroducing such urban forms.
[2] Such as Haussmanian and HBM experiences in Paris, *Grossiedlungen* in Berlin or Frankfurt, the New Amsterdam Urbanism, …
[3] E.g. Terraced buildings by Sauvage or the *Immeubles Villas* by Le Corbusier are abandoned residential solutions.
[4] For instance, Le Corbusier's *Five points towards a new architecture* contradict, item by item, every housing convention of the time.
[5] In 1830, Belgium becomes an independent state with Brussels as its capital.
[6] In Europe, only London is similar, in Heymans V., *Les dimensions de l'ordinaire*, L'Harmattan, 1998, p.16.
[7] Out of 546 118 housing units, 195 831 are located in row houses (approximately 140 000 houses built before 1918). Sources: IBSA, 2011 and ibid. p. 10.
[8] Numbers based on residential ground occupancy maps. Maps Ledent 2010-2011 and Dessouroux C. (2008). *Espaces partagés, espaces disputés. Bruxelles, une capitale et ses habitants*, Direction Études et Planification (AATL), Bruxelles, 2008, p.111
[9] Ledent G., *Une forme urbaine à l'épreuve des pratiques domestiques de l'habiter*, UCL, 2011, p14-15.
[10] «*At three or four stories, (…), you can see details in the street (…). From three stories you can yell out, and catch the attention of someone below. Above four stories these connections break down.*» Alexander C., Ishikawa S., Silverstein M., A pattern language: towns, buildings, construction, Oxford University Press, 1977, p. 118
[11] Ledent G., Une forme urbaine, *op. cit.*, p.25.
[12] In that regard, the Brussels North District is an exception.

Bibliography

Alexander C., Ishikawa S., Silverstein M., *A pattern language: towns, buildings, construction,* Oxford University Press, 1977.
Banham R., *Theory and design in the first machine age*, MIT Press, 1996.
Barthes R., *Comment vivre ensemble?* : Seuil, 2002.
Beekaert G., Strauven F., *La construction en Belgique. 1945-1970*, Confédération nationale de la Construction, Antwerpen, 1971.
Boutang P., *Ontologie du secret. 2*, Presses universitaires de France, Vendôme, 2009.
Brauman A. and all., *L'immeuble et la parcelle. Les immeubles à appartements comme éléments constitutifs du tissu urbain. Le cas de Bruxelles. 1870-1980*, Editions des Archives d'Architecture Moderne, Bruxelles,1982.
Castex J., Depaule J.C., Panerai P., *Urban forms: death and life of the urban block*. Architectural Press, 2004.
CERAA, *Morphologie urbaine à Bruxelles*, CERAA, Bruxelles, 1987.
Chamboredon J.C., Lemaire M., *Proximité spatiale et distance sociale. Les grands ensembles et leur peuplement*, in "Revue française de sociologie", vol. 11, n. 1, p. 3-33, 1970.
Cloquet L., *Traité d'architecture. Eléments de l'architecture. Types d'édifices. Esthétique. Composition et pratique de l'architecture*. Ch. Béranger, Liège, 1900.
Colquhoun A., *Typology and design method*, in Nesbitt K., *Theorizing a New Agenda for Architecture. An Anthology of Architectural Theory 1965-1995*, Princeton Architectural Press, p. 248-259, New York, 1995.
Declève B. and all. 2009, *BXXL. Objectivation des avantages et inconvénients des immeubles élevés à Bruxelles*, UCL – CLI, Bruxelles, 2009.
Demorgon M., Depaule J.C., Panerai P., *Analyse Urbaine*, Parenthèse, Mercuès, 2009.
Dessouroux C., *Espaces partagés, espaces disputés*. Bruxelles, une capitale et ses habitants, Direction Études et Planification (AATL), Bruxelles, 2008.
Dreysse D.W., *Les cités de Ernst May: guide d'architecture des cités nouvelles de Francfort, 1926-1930*, Dieter Fricke, Frankfurt am Main, 1988.
Dumont M.J., *Le Logement social à Paris 1850-1930: les habitations à bon marché*, Mardaga, 1991.
Ebner P., *Typology +, Basel*, 2010.
Eleb M, *L'invention de l'habitation moderne, Paris 1880-1914*, Hazan, Paris,1999.
Hall E.T., *La dimension cachée*, Seuil, 1978.
Hennaut E., Liesens L., *Cités-jardins. 1920-1940*, AAM éditions, Bruxelles, 1994.
Heymans V., *Les dimensions de l'ordinaire*, L'Harmattan, 1998.
Huet B., *L'architecture contre la ville*, *in Architecture*, Mouvement, Continuité, Décembre, 1986.
Jorissen D., Vandermotten C., *Le logement social à Bruxelles depuis 1919*, in "Espaces, populations, sociétés", vol. 1, p. 137-144, 1986.
Ledent G., *Une forme urbaine à l'épreuve des pratiques domestiques de l'habiter* : Epreuve de confirmation, UCL, 2011.
Lussault M., *L'homme spatial: la construction sociale de l'espace humain*, Seuil, Condé-sur-Noireau, 2007.
Mangin D., Panerai P., *Projet urbain*, Parenthèses, Géménos, 2002.
Martens A., Vanden Eende M., Quartier Nord. *Le relogement des expulses*, EPO, Bruxelles, 1994.
Moley C., *L'immeuble en formation: genèse de l'habitat collectif et avatars intermédiaires*, Mardaga, 1991.
Moley C., *Regard sur l'immeuble privé*. Le Moniteur, Paris, 1999.
Noël F., *Les politiques d'habitat*, Université Libre de Bruxelles, 2009.
Paul-Lévy F., *Segaud M., Anthropologie de l'espace*. Centre Georges Pompidou, Centre de création industrielle, Poitiers, 1983.
Pinson D., *Usage et architecture*. Editions L'Harmattan, 1983.
Pinson D., *Architecture et modernité*, Flammarion, Paris, 1996.
Pinson D., *Configurations architecturales et urbaines de l'habitat*, in Bonvalet C., Brun J., Segaud M., *Logement et habitat : l'état des savoirs*, La Découverte, p. 298-304, Paris, 1998.
Raymond H, *L'architecture, les aventures spatiales de la raison*. Centre Georges Pompidou, Centre de création industrielle, 1984.
Salignon B., *Qu'est ce qu'habiter?*, Editions de la Villette, Paris, 2010.
Salmain F., *Album de la maison moderne*, Salmain, Fernand, Bruxelles,1908-1913.
Segaud M., *Anthropologie de l'espace: Habiter, fonder, distribuer, transformer*, Armand Colin, Vottem, 2007.
Serfaty-Garzon P. *Expérience et pratiques de la maison, Home Environment. Human Behavior and Environment. Advances in Theory and Research*., vol. 8, p. 65-86, 1985.
Simmel G., *Les grandes villes et la vie de l'esprit*, L'Herne, Paris, 2007.
Sint-Lukaswerkgemeenschap, *Logements sociaux de construction en hauteur*, Région Bruxelloise, Leuven, 1989.
Smets M., *L'avènement de la cité-jardin en Belgique, Histoire de l'habitat social en Belgique de 1830 à 1930*, Mardaga, Liège, 1977.
Van Dijk P., *Immeubles à appartements de l'entre-deux-guerres, Ministère de la Région de Bruxelles-Capitale*, Bruxelles, 2007.
Vidler A., *The idea of type. The transformation of the academic ideal, 1750-1830*, in *The Oppositions Reader*, n° 8, p. 437-459, 1977.
Wajcman G., *L'architecture, l'intime e le secret, in laboratoire analyse architecture*, [Online], 2008.

Figures
p. 3 : Maps Ledent, 2012.
p. 5 : Collage on the basis of Album de la maison mo



Marco Lucchini
Politecnico di Milano, Italy

Sober, Sustainable and Urban: Recent Housing Experiences

Focus

The recent demographic and economic dynamics have made housing a very modern topic which could be faced from a socio-economical point of view, therefore looking at housing as a "matter", or from an architectural point of view. These two points of view are interconnected but the architectural one will be more relevant to this discussion.
The aim, in fact, is to put forward some possible guidelines in order to project models of living structures that are low cost, sustainable and expressing urbanity: a positive relation between space's shapes and inhabitants' behaviours.
It is anyway important to consider what impact socio-demographic changes have had on housing demand, since the "family" is undergoing a process of fragmentation: more families with fewer members (Pozzo, 2008).
A significant share of the demand is made up by new categories of users, dissimilar from the traditional family, such as singles, city users, off-site workers, students, immigrants, persons suffering from a social or psychological distress in the process of recovering and needing for housing.
In traditional families too, there are some changes; the same activities are still taking place within the house but in a different way: for example, relations among family members are more informal, moments of aggregation have decreased, children's length of stay within the original family unity has increased.
Houses made available, both in the private market and from social housing, are conceived with a traditional approach and, for what concerns Italy, build up with obsolete techniques and high costs which obviously have an impact on final prices.
A paradoxical situation has occurred where demand and supply have increased without meeting each other's need since the demand does not find a legitimate middleman for the supply (Grecchi, Turchini, 2006).
Supply of housing market is not, therefore, very receptive both to the needs of new categories of users or to the changing needs of the traditional family.
Even if up-to-date with the latest technologies, proposed building types are still the same as they were 40-50 years ago: they are suited to "contain" standardized accommodations organized by "rooms" and addressing an average user who no longer exist.
Moreover, these houses can very rarely be personalised, unless with high costs, and have a very rigid configuration.
Users, especially couples, tend to purchase houses that can be adapted if the family unit increases in numbers, according to one's means; when the family configuration changes, the house becomes overcrowded or unused.
As for architectural theme, scale settlements on contemporary residential landscape, architecture looks like a landscape of fragments. The attention to the connection with the context is often, for reasons related to the land market, short-lived. Residential buildings, isolated or in small groups, although defined by fine formal outcomes, stand like monads rarely fitting into well conceived public spaces. Nowadays residential interventions are made up of buildings isolated in space and not able to relate with each other, if not for sheer juxtaposition; it is often an improper deformation of the "palazzina"[1], type, enlarged in size and spread on the territory seconding the causality of real estate investment. As in the recent development programme for Social Housing in Madrid, where highly-reputable architects were involved, despite the high quality of the buildings, the overall urban design leaves too much to be desired. Possibly it is no longer possible to imagine large housing schemes like the ones in Weimar's Germany or to the post-war Italian modernist districts. As the facts prove, we must not be delusional about the formal quality of urban design in Italy. Major transformations are managed by financial capital, at the utmost there may be some quotas left for social housing.
In principle, models favouring low density housing are no longer considered sustainable since they are among the causes of sprawl where habitat is represented by the individual house, heir of the well known proudhonian myth "my house made my way". Parcelling dividing up the countryside, separated by "empty" spaces that can be covered only by car, led to a huge consumption of soil and energy resources so to facilitate inhabitants mobility.

Project's guidelines and examples

Settlements types

The main aims of a project for a residential complex should be density control, relation with other buildings, shape and quality of open space, shape of buildings.All these elements contribute to determine the quality of what Bruno Taut defined as *aussenwohn raum* (Junghanns, 1984)
The density should be medium-high to save soil and farmland and thus generating that urban effect which allows new settlements to be interconnected with the pre-existing settlement fabric.
Density is determined by the relation to the quantity of buildings, the height of the building and their shape and layout. Control over these elements will make it possible to choose, according to the context, "closed" (spatial shapes that allow a close view) or "open" settlement types (spatial shapes that allow spaces gradation and a far view). (Pugliese, 2005)
The presence of common spaces, designated for greenery or aggregation, contributes to calculate figurative values to the space itself.
Since buildings are not design objects, their volumetric shape affects the shape of open space, the limit of which are the walls of the buildings themselves. These limits can no longer be seen as an inside/outside dichotomy, like in the 19th century's building curtain, or as fences marking the building's extent. These limits should be scaled according to the context, constituting thresholds, intervals, permeable fences and spatial polarization; then they need to be integrated with public spaces in order to obtain a certain typological and functional complexity. They will become central spaces for interaction, fit for interpreting the diverse site's settings, creating new urbanities and avoiding social distress.

Connections among main buildings could be based on proximity or on distance, creating syntactic or paratactic relations that should, in any case, guarantee optimal conditions to sunshine exposure by using an open space's shapes appropriate to the site's morphology.
Projecting open spaces is the first step towards sustainability and reduction in energy consumption. Energetic efficiency is not only about applying technological solutions to the main building but it is also about optimising pre-existing environmental resources: local greenery could help in balancing the outside microclimate and at the same time could be useful in controlling the relations among open spaces.
Settlements must be part of a net of connections to the urban scale which will contribute in keeping public spaces lively, avoiding situations of social distress.
The district of public social houses in Alcoy, carried out by Manuel De Solà Morales between 1995 and 2001, in Alicante's hinterland, is a particularly successful case: a happy synthesis between preservation of the historical pattern and the introduction of a paradigmatic modern model for settlement, that is to say the slabs and linear building type. The latter has been adapted to the context's features leading to a result distinctly referring to modernity but deeply coherent with the local characteristics.
The district has been build up in an ancient part of town named "La Sang". The settlement pattern is dense and solid, it is organized in blocks and could belong either in the curtain building type or in the carpet-like city fabric. The pattern grain is tiny: main buildings, with planimetric contained sizes, aggregate into broad curtain buidings while the volumes are variable in height.
The newly constructed slab building type are orthogonally oriented and are joined to the pre-existing curtain building that defines carrer Sant Mateu, the main street of the common space. Geometries and positions of the preceding residential buildings on the urban pattern are converged into the new settlement, defining a sort of organized layout.
Even if keeping the slab buildings, that tends to create an open spatiality on all sides, Solà Morales adapted the settling project's measurements to the context: the distance between buildings and the angle formed by their longitudinal axes, as for the curtain building on carrer Sant Mateu, have been slightly modified in order to adapt to the positions of the pre-existing pattern and especially to some tracks of penetration in the urban pattern. Also on the plan, the shape of the buildings has been modified in order to be connected to what existed before: towards north, where the historic curtain building bends following a curved thoroughfare, the first slab also deforms to one of its ends with an obtuse angle, breaking up into buildings tower. They settle into the vast and steep public space, located behind the new housing development, finding a compromise with the inconsistent and fragmented eastern edge of the intervention's area. The insertion of the new buildings in the pattern takes place in three different ways: by contact, by approach and by intersection, where the third and sixth building of the new settlement extend beyond the inner edge of the historic curtain building, partially overlapping with it. Overall, the typological consistency in synergy with the capability of getting the suggestions from the historical stratification, value a fragile historical pattern while introducing innovative features based on a uniform urban design.
Another interesting case is the project of Fuensanta Nieto and Enrique Sobejano, carried out in the outskirts of Seville in 2001: the realization of a large building for social housing, in a challenging area: irregularly shaped (like a scalene triangle) and adjacent, on the longest side, to the SE30 highway. It was therefore necessary to also take into account the network and the infrastructure scale. The settlement combines the curtain building model with an open block building model; the curtain, some 200meters, is interrupted by cuts that reveal the turning of the main buildings into orthogonal structures of different lengths.
This housing complex relates to the highway track as an emerging artefact; the aim is to mark out the new city boundaries represented by discontinuous elements placed along the main infrastructures.
Sizes too, which relate to the tradition of the great residential artefacts, are consistent with the search of a view that can allow the dynamic perception of the landscape you get from the highway. (Fernandez Per, Mozas, 2004)
The accommodations[3], arranged in duplex, have access from a landing facing the road so as to shield them from the noise. The landing facade also has a "double wrap": an outer skin made of cement panels covering the inner core, where the accommodation is.
Public spaces are, preferably, positioned between the curtain parallel to the road and the "strips" positioned orthogonally to it so as to create space as much as possible protected.
An example on a smaller scale is represented by the small housing settlement of Edilizia Residenziale Pubblica carried out in Milan, near via Civitavecchia, between Lambro park and via Palmanova, by the Consalez Rossi studio, within the contest "Abitare Milano".
The aim was to redeem the area, from the situation of social distress, working on the edges between the city and the urbanized nature of the park.
The settlement system consists of a tower, located in frieze in via Civitavecchia, and of a system of slab buildings, parallel to each other but shifted. The first building, which is also the access point, from a morphological point of view, marks out the edges between the city and the park. The second building instead, configures a system similar to a comb and orthogonal to via Civitavecchia, that outlines the path between the Crescenzago metro station and the park.
On the layout, the tower is made up of two squared blocks linked through the stair's structure and rotated following positions consistent with the context in order to form the shape of a V open towards the town. The whole tower presents a uniform surface punctuated by the spacing among the fibrecement panels of which it is covered; it is carved with double height logge and with freely laid out windows. In the sobriety of the expressive manners can be recognized, as already said, some well balanced reference to the modernity of the '60s in Milan (Braghieri, 2010). Buildings with longitudinal layout seem closer to the educated image of the "palazzina" than to slabs' one of the heroic rationality; this choice, due in part to the quantity of programmed settlement, contributes to make the built-up area closer to the human dimension which is a substantial part of urbanity. In this last theme is also included the attention for services and common spaces; the realization of a typological innovative building is planned: the "Casa dell'Acqua", a spa with Turkish bath, swimming pool and more.

Building types: residential cells "in box" vs container space/environment.

The majority of the accommodation thought for the average user (both in the privet market and in social housing) are mainly conceived around the concept of space as a box, a sequence of rooms with a univocal correspondence between space and destination. This conception is an inheritance of the XIX century bourgeois house (Ottolini, 2011).
The layout of the house happens aggregating functional areas: hall, living room, dining room, bed rooms, kitchen and bathroom. The most common division is day/night area, serving spaces (kitchen, laundry and bath room) and served spaces (living and dining room).
There are two main tendencies: the first one defines space's measurements on an abstract base, according to the hygienic-sanitary requirements; the rooms so obtained are afterwards aggregated following mainly a functional logic. The more the space is fragmented and articulated, the higher is the rigidity.
The second one, consistent with the epistemology of the Rationalism's system, works on the layout in order to use all the space in the best possible way offering, at the same time, the best life conditions and especially sunshine exposure, aeration and lightning. The space is divided by the body measurements, by the pieces of furniture and the space needed to use them, defining the least portions of space needed to carry out a specific function in relation to the number of inhabitants. They do not correspond to a room but to spatial area to which must be added the space necessary to move for each specific living model. The space sizing is cut on measures congruent with those of the human body, then living shapes and spaces become the result of a synthesis that is able to interpret critically the functional needs. Each component, though, must work in close synergy with the other just like the parts of a machine must work simultaneously.
A model, opposite to the "container" space, based on the Newtonian concept of open space, is deeply developed by Mies Van Der Rohe and by some other designers like Gio Ponti (project of a living space for four people), Vittoriano Viganò (Villa Bloc), the Smithson (the house of the future) and more recently in Japan, by models based on the tatami modular system. A very well-known project is the "9 square grid house" from Shigeru Ban where there is no rigid space partition but only some sliding panels.

Building types: flexibility as a resource

The notion of flexibility allows to find a mediation between the two above mentioned spatial conception. It would therefore be possible to design accommodations which spatial arrangement can be modified according to changing and diverse user's needs.
Flexibility: the ability of adapting an accommodation's conformation to the diverse user's needs. Mainly designers apply very general standards, according to regulations or functional requirements, which need to adapt to various real cases. Behaviours and life styles should adequate to architecture, as said by Rem Koolhaas referring to "Procuste's bed" (Koolhaas, 1991). Flexibility instead, aims to the contrary: shaping the space according to living behaviours so to cover the lack of conversation between architect and customer. Moreover, flexibility balances out the relation between available space and development of user's needs, among which the most common are: the variation of the family numbers, the coexistence of different habits and activities, including working ones, the limited amount of living space available, due to economical reasons, and the consequent function's overlapping.
A first basis for flexibility is the ability to deal with the relation between still and changing elements: for example, in the layout of a living complex, it will be necessary to "set" some unmoving elements, such as sanitation and kitchen, and allowing the others to vary (Gili, 1997). a second option concerns internal movement: in order to enable a more flexible communication, it could be proposed a "pass-by kitchens" that outlines a circular path around the facilities.
A distinction has been made (Gili, 1997) between initial flexibility, when the user, in accordance with the designers, can change the outline of the accommodation before it is constructed, and permanent flexibility, when the design project always allows to vary the accommodation's structure.
The latter can also have two options. A short-term flexibility,

applicable for a restricted period of time, that allows to quickly modify the inner space in order to adapt it to the different activities taking place during the day; in this case the changes in the configuration are expected to happen with simple manoeuvres.
A medium/long-term flexibility: the configuration of the changed by disassembling and reassembling of partition's elements without involving demolitions or significant interventions on the structure.
Flexibility can have an impact on space mainly in three ways: the first one consist in leaving some slack spaces, which can also be lacking in furniture, and raw spaces managed by the users; the second one involves the use of movable and sliding walls; and then the third one suggests the possibility of parting the accommodation in smaller parts or extend it taking advantage of empty spaces already planned in the layout (Schneider, Till, 2007).

Conclusions

The role of architecture is to design new type of houses, affordable, durable, sustainable, that can be take into consideration as an investment by private buyers. From the architectural point of view they should meet the above mentioned requirements with the aim of facilitating connections between users' needs, the interests of real estate operators, constructors companies, component manufacturers and professionals, in order to promote a new way of living sober, sustainable and urban.
Sobriety must primarily concern the aesthetic aspects of the building, avoiding both to use technology as an end rather than as a mean and sterile formal virtuosity. Sustainability not only means reducing the soil consumption, reduction of emissions and energy saving but also means public spaces of a good quality with adequate services that will keep people from seeking illusory conditions of urbanity in the hinterland commercial containers.

Notes

[1] "small palace", a single building with usually two or three apartments per storey
[2] outdoor living space
[3] There are 174 accomodation of which 114 duplex. Maximum surface is 70 squared meters

Bibliography

Braghieri N., *Sull'erba del Lambro*, in «Casabella» n. 789, 2010.
Junghanns K., Bruno Taut, 1880-1938, Franco Angeli, Milano, 1984.

Gustau G. G, *Pisos Pilotos, cellulas domesticas experimentales*, G. Gili, Barcellona, 1997.

Grecchi M., Turchini G., *Nuovi modelli per l'abitare: evoluzione dell'edilizia residenziale di fronte alle nuove esigenze*, Il Sole 24 ore, Milano, 2006.

Koolhaas R., *Our new sobriety* in Lucan J., *Oma. Rem Koolhaas*, Electa, 1991.

Mozas J., Fernandez Per A., *Densidad*, A+T ediciones, Vitoria-Gasteiz, 2004

Ottolini G. (Ed.), *La stanza*, Silvana Editoriale, Cinisello Balsamo, 2011

Pozzo A., *La politica della casa e le sue evoluzioni nei paesi d'Europa*, in Casolo C. (Ed.), in *Edilizia sociale in Europa*, Milano, 2008.

Pugliese R., *Case popolari e urbanità*, in ID (Ed.), *La casa popolare in Lombardia 1903-2003*, Unicopli, Milano 2005.

Schneider T, Till J., *Flexible Housing*, Architectural Press, Oxford, 2007.

Legenda

001 lucchini_marco Solà Morales, La Sang residential complex, aerial view
002 lucchini_marco M. Solà Morales, La Sang residential complex, ground floor

Domizia Mandolesi
Università Sapienza Roma, Italy

The regeneration of public housing neighbourhoods. The example of Tor della Monaca in Rome

HousingLab - DIAP Sapienza University of Rome

Regeneration as a Best Practice in the Transformation of European Cities

As part of the more general examination of social housing, a growing phenomenon in the majority of Europe's leading cities, a determinant role is being assumed by interventions of urban regeneration[1] linked to the requalification of large public housing estates. Countries such as France, Germany and the United Kingdom began implementing policies of regeneration back in the 1970s, achieving, even with diverse strategies and orientations, an integrated approach focused on three principal objectives: physical renewal; integration and social security; the identification of economic strategies.

These strategies move beyond simple building maintenance, adopting radical modifications that manage to change not only the image of highly deteriorated neighbourhoods, but also the lifestyle and behaviour of their residents. All of this has an influence on the broadest urban and territorial dynamics and introduces innovative and sustainable solutions at the scale of the dwelling unit, the building and the neighbourhood, with positive repercussions on the overall quality of habitat. At a time of crisis such as the one we are currently experiencing, social housing, intended as an integral part of planning policies, may play a decisive role in re-establishing a direct relationship between the forms and methods of physically organising urban space and the social structure of the contemporary city[2].

As in many other metropolitan European contexts, France has also been witness over the past twenty years to the spread of serious social and urban problems resulting from the deterioration of many social and public housing projects constructed during the 1970s and '80s.

Of particular interest is the research made by the plus group on behalf of the French Ministry of Culture and Communications[3]. The results can be found in a feasibility study that evaluates diverse alternatives to the demolition of four residential complexes in different parts of France. The use of more or less 'heavy handed' methods when dealing with existing buildings, rather than simply demolishing to rebuild, may offer, in addition to economic advantages that must be evaluated in each specific circumstance, a means of recognising the value of the sedimentation of social and cultural instances linked to the resident population and its position in the vaster urban context, looking beyond the obvious conditions of physical deterioration and objective degradation. This constitutes a necessary practice, according to the French group, that operates within a perspective of environmental, social and economic sustainability, capable of substituting the obsolete principle of the 'throw away' with that of 'recycling', to be extended from everyday objects to buildings and the urban context.

An analogous philosophy guided the imposing actions undertaken during the 1990s by the reunified German Government, including an investment of more than Euro 50 billion for the requalification of the Plattenbauten. Since 1999 the United Kingdom has also pursued programmes of intervention in existing social housing estates, work case-by-case to identify design guidelines for improving their liveability, socio-economic conditions and architectural and urban quality, in addition to guaranteeing a social mixité, reinforcing local residents' sense of identity and belonging and, more in general, creating sustainable neighbourhoods, suitable to contemporary lifestyles. A leading example is that of Park Hill in Sheffield[4], where the requalification project worked at different scales: that of the flats, defining different sized units; that of the building, with interventions to modernise energy systems and substitute façades, including the modification of their composition and the introduction of colour; and, at the scale of the neighbourhood, through the redesign of open spaces.

Comprehensively, these projects demonstrate the convenience and the economic, social and environmental sustainability and effectiveness of strategies for the enlargement and regeneration of the existing. The transformations almost always involve the architectural image of the buildings, with additions and/or subtractions of volumes, the internal distribution of the flats, new energy systems, the integration of services and public spaces, in particular landscaping to improve the overall quality of the environment. The proposals are generally radical with respect to the conditions of the original structures. This is partly because in the majority of cases the driving force behind the entire operation, in addition to physical deterioration and the modernisation of energy systems, is the desire to change the characteristics of urban and residential spaces to create *mixité* and to resolve serious issues of marginality and the refusal or abandonment of an area by its residents.

The Italian Situation and the Proposal for the District of Tor Bella Monaca in Rome

As with the European contexts described above, in Italy the intense expansion of residential fabrics over the past fifty years, with planned public interventions on the one hand and spontaneous construction on the other, have created diverse forms of dysfunction and economic and social imbalances within the metropolis. To stem the tide of these problems, it is necessary, also in Italy, to adopt policies and strategies of regeneration for transforming the existing based on models of sustainable development. The regulations of the new *Piano Casa*[5] and the reduction of polluting emissions from domestic facilities and the consumption of energy, stimulated by the implementation of Italian Legislative Decree 2005[6], represent important occasions for activating a new phase of requalification works at the vast scale. The research of the *HousingLab*[7] belongs within this framework of new opportunities. This laboratory is part of the DIAP - Dipartimento di Architettura e Progetto at the Sapienza University of Rome. The objective of its research is the promotion of models of territorial growth based on the need for 'self-limitation', intervening within the existing through actions of layering, densification and grafting. For some time now, the *HousingLab* has confronted studies, projects and research focused on questions related to the instruments, procedures and strategies of design to be implemented for the requalification of urban fabrics (spontaneous and planned) in peripheral and marginal areas of large cities (cf. A. De Cesaris, *Strategies to regenerate suburban sprawl. Case study in Rome*), and in reference to the city of Rome. Rome boasts a large heritage of social housing estates, realised above all after the Second World War, that define entire parts of the city. The entities responsible for their management have invested only sporadically, through interventions focused only on resolving emergencies and in the absence of any comprehensive strategy. This has determined a physical, functional and also a social and economic deterioration that has generated problematic situations and the marginalisation of entire districts.

One of the lines of research of the *HousingLab* group is thus focused on the regeneration of public housing complexes constructed after the 1950s. In particular, the group is working on the definition of guidelines for interventions to transform the existing based on a model of contemporary housing that is both shared and economically, energetically and socially sustainable. This means identifying case studies selected from among public housing projects constructed prior to the 1980s that, beyond their particular qualities, also present analogies in their built and urban characteristics, as well as their critical elements (i.e.: the deterioration of buildings and open spaces, formal monotony and uniformity, the safety of open spaces, the use of similar materials and techniques of prefabrication) for which to develop design hypotheses coherent with pre-established objectives of regeneration.

An initial consideration for verifying interventions and design solutions focused on regenerating public residential heritage was offered by the *Competition for the Requalification of the Tiburtino III District in Rome*, organised by Ater in 2010[8] . This project was used to define a number of strategies and hypotheses, beginning with the critical conditions of the neighbourhood and the requirements of the competition brief. In particular, the strategies hypothesised, at the urban scale and that of the individual unit, can be summarised as:

- the redesign of open spaces with a particular focus on accessibility and the integration of new public services;
- the reorganisation of parking areas as 'active spaces';
- the redefinition of building volumes with new connections at grade and the addition of a new crowning layer;
- building redesign, with a focus on energy systems, and the creation of new façade systems;
- forecasts for diversified unit sizes for new users, such as the elderly or students.

However, the most important opportunity for developing a *corpus* of guidelines capable of constructing useful references for cases of analogous intervention presented itself with the experiments in the district of Tor Bella Monaca, a public housing area in the south-east periphery of Rome, for which the municipal administration has recently presented a proposal of demolition and reconstruction.

The fruits of a Zoning Plan approved in 1980 and realised between 1982 and 1984 based on a special procedure of tendering in concession to a consortium of companies, TBM represented a model neighbourhood in relation to the procedures adopted and the speed of its realisation: only two years to construct social housing units for some 28,000 people, based on three typologies: linear, tower and courtyard structures. The entire development occupies 188 hectares, 51 of which are given over to landscaping and 29 to services. At the outset, as the inhabitants recall, the sensation was that of being deported from central areas to be confined in what, at the time, constituted the limit between city and countryside. In 1995, thanks to the efforts and battles waged by the citizens themselves, the neighbourhood began to come alive, acquiring a number of local services, high schools, sporting facilities and a large theatre, in addition to a system of infrastructural connections with the Tor Vergata University and Hospital, with the area of the Castelli Romani, the large office complex of the Banca d'Italia and Enea. Today the neighbourhood is a consolidated and to some degree resolved part of the city of Rome. Many of its residents are strongly tied to the area and recognise the advantages of a model of settlement that, dominated by tall buildings, offers a notable panoramic view across the Roman countryside and the possibility to exploit open spaces at grade for landscaping and public space. Tor Bella Monaca thus constitutes a case study of particular interest for its history, its urban position, its environmental qualities, its archaeological pre-existences and the presence of a community that has grown over the years, partially as a result of the fights to improve living conditions in the district.

The problems of Tor Bella Monaca, today, are less the result of its construction, and more that of other aspects linked to its management and the socio-economic conditions of its residents. In particular, the most serous and evident critical elements of this neighbourhood are the result of: the elevated concentration of lower classes and subjects who risk turning to crime, for example ex-prisoners and unemployed youth, who are not offered suitable support or possibilities for employment; the dispersive nature and conditions of abandonment of its open spaces, a condition that does not favour the formation of spaces of cohesion and services, above all for the young and the elderly.

Beginning with these premises, in addition to the vast literature examining European experiences, the *HousingLab* group, rather than proceeding with a *tabula rasa* of demolitions, chose to deal with the existing, seeking new values and meanings through the activation of an integrated process of built, urban and landscape regeneration in the neighbourhood. The *HousingLab* thus developed an alternative proposal to that presented by the City of Rome, as a means of opening up the debate and demonstrating that renovations are more suitable and economic than demolitions-reconstructions, a process that, behind the alibi of 'cleaning up', merely creates another tabula rasa of more virgin territory.

The evaluation of these critical elements and the opinions of its residents, the evident potentialities of the neighbourhood, including the quality of its existing and planned public connections that make it part of a network involving the rest of the city and particularly the centre of Rome, the value of the landscape and environmental context in which it is inserted, have all strengthened the conviction that it is possible to transform Tor Bella Monaca into a model neighbourhood of sustainability.

The analyses and verifications of social and welfare conditions and the physical and environmental condition of the neighbourhood's built and open spaces, revealed a number of primary working themes, based on which to elaborate hypotheses for the transformation of the district, considering its economic, social and environmental sustainability as a general criteria common to all of the themes identified.

One of the themes regards the reorganisation of infrastructural networks.

While the infrastructural road and transport networks, existing and planned, as mentioned, appear efficient and capable of guaranteeing proper connections with other parts of the city, the system of connection within the neighbourhood and with the adjacent *borgate* is highly insufficient, and pedestrian movement nothing short of impossible.

Streets and parking occupy vast spaces that can be redesigned, integrating them with new road and pedestrian connections, introducing a new system of internal transportation that connects with other parts of the neighbourhood, services, facilities and the sprawling city that surrounds it.

Connected with the issue of infrastructure is the necessity of reorganising public open spaces, whether they are used as landscaping or as urban spaces, as public squares, meeting points, pedestrian or bicycle paths and crossings. This is now one of the most serious problems in the neighbourhood. The large quantity of these areas, difficult to manage or maintain and with undefined uses (according to our studies, just under 40% of the total of open space) is abandoned to physical deterioration, becoming inhospitable and 'unsafe', while, opportunely transformed, even through the realisation of new constructions, services and manufacturing structures, may constitute an important resource for the neighbourhood.

This implies the necessity of re-thinking the ground and with it the restructuring of the ground floors of its buildings, now primarily used as residential space.

The unavoidable presupposition, finally, of not broadening the urban perimeter to avoid further consuming the *agro romano*, and at the same time the need to profoundly transform the neighbourhood guided the research towards the choice to densify by 'building atop the built'.

In fact, the presence of large voids, together with the role assumed by the neighbourhood in the urban sector, consents a hypothesis of building operations, utilising the diverse positive experiences of project financing to realise public and private instruments, designed to increase:

- spaces for work;
- social, cultural and tertiary services for the neighbourhood and the vaster urban area;
- residential units for a mixed users.

Another highly incisive choice is constituted by interventions designed to renovate existing buildings, in order to improve their energy performance and their architectural quality. In fact, it is our belief that is it acceptable to proceed with the demolition and the substitution of buildings within consolidated urban structures only in exceptional cases and only after attentive structural and economic evaluations.

In synthesis, the proposal for the regeneration of Tor Bella Monaca in Rome, limiting demolitions to the most serious cases of structural deterioration, may be linked to three primary strategic actions:

- *building atop the built*, restoring façades, plant systems and dwelling units, renovating ground floor levels to contain new functions, realising new typologies and services in order to densify the current fabric, at present too rarefied to acquire an urban character, and creating a social *mixité*;
- *redesigning the system of infrastructures and open spaces*, improving internal connections within the neighbourhood and integrating them with the city, creating new public spaces and landscaped areas;
- *identifying strategic functions, primarily tertiary or cultural*, at both the local and the metropolitan scale.

Through interventions such as those described above we believe it is possible to trigger a profound transformation of the neighbourhood that, connected with important parts of the city, such as the Tor Vergata University and Hospital and the future centrality of the Romanina, what is more exploiting its position within the agro romano and the consequent environmental potentialities, may generate new and improved living conditions for residents, reducing phenomena of social segregation and insecurity, with positive effects on the entire urban system.

Notes

[1] The term 'regeneration' is utilised in lieu of 'requalification' to underline the radical nature of the transformations brought about by this kind of intervention, based on three principal operations – addition, subtraction and reconfiguration – in order to

restore new life to a building or urban structure.
[2] Cf. G. Franz. F. Leder (eds.), *La riqualificazione delle periferie residenziali*, Firenze, Alinea, 2003.
[3] The results of this research can be found in Frédéric Druot, Anne Lacaton & Philippe Vassal, plus. *La vivienda colectiva. Territorio de excepciòn*, Barcelona, Gustavo Gili, 2007.
[4] Park Hill is a council housing estate in Sheffield, South Yorkshire, England. It was built between 1957 and 1961. In 1998 it was given Grade II listed building status, making it the largest listed building in Europe. Following a period of decline, the estate is being renovated by the developers Urban Splash.
[5] With a series of regulations that vary from region to region, the new *Piano Casa* housing plan offers incentives, by allowing increases in volume, to projects for the requalification of existing residential housing, both public and non-public, wishing to proceed with enlargement works.
[6] With Ministerial Decree n. 26 June 2009, which established the guidelines called for in a 2005 Legislative Decree, the entire Italian territory was subjected (even with a significant delay that will result in heavy sanctions should the country be unable to reduce its polluting emissions by 19% by 2012) to obligatory presentation of energy certificates for both new and existing dwellings (cf. Dossier Energia, in "Costruire" n.316, October 2009).
[7] *HousingLab* is part of the DIAP - Dipartimento di Architettura e Progetto at the Sapienza University of Rome. Exploiting experience consolidated over time working with the theme of dwelling, the *HousingLab* examines urban regeneration, typological innovation and environmental sustainability. The work group is comprised of Alessandra De Cesaris (director and scientific coordinator), Domizia Mandolesi (scientific coordinator) and Maria Teresa Aprile. Contacts: via Flaminia 359, 00196 Roma, Italy +39 06 3210230 fax. +39 06 32101250 housinglab@uniroma1.it http://w3.uniroma1.it/housinglab.
[8] The results of the design competition, organised by Ater Roma, the Territorial Agency for Residential Construction in the Municipality of Rome, were published in Annese M. e Del Brocco B. (a cura di), Catalogo del *Concorso internazionale di progettazione PASS Progetto per abitazioni sociali e sostenibili Tiburtino III*, Roma, Gangemi 2012.
[9] The proposal for the regeneration of the neighbourhood of Tor Bella Monaca in Rome by the HousingLab at the DIAP Sapienza Rome, was elaborated as part of a study seminar on the theme organised by a group of researchers from the Departments of seven Italian Faculties of Architecture, coordinated by the HousingLab and under the scientific direction of Marta Calzolaretti. The results have been publicly presented on many occasions: INARCH Rome in November 2010 and April 2011; EIRE in Milan in June 2011. A brief synthesis of the work was presented in D. Mandolesi, *Demolire o rigenerare? Il caso di Tor Bella Monaca a Roma*, in "L'Industria delle costruzioni" n. 420, 2011.

Bibliography

AA.VV., *Abitare la periferia, l'esperienza delle 167 a Roma*, Camera di Commercio, Roma 2007.

Annese M. e Del Brocco B. (a cura di), *Catalogo del Concorso internazionale di progettazione PASS Progetto per abitazioni sociali e sostenibili Tiburtino III*, Roma, Gangemi 2012.

Bellicini L. e Ingersoll R., *Periferia Italiana*, Meltemi, Roma 2001.

Bossalino F. e Cotti A. (a cura di), *Roma anni Novanta. L'edilizia residenziale pubblica e la nuova forma della città*, Sapere 2000, Roma 1992.

Calzolaretti M., *La rigenerazione dei quartieri di edilizia residenziale pubblica. Il caso di Tor Bella Monaca a Roma*, in «AR» n. 93, 2011.

Calzolaretti M. (a cura di), *Le trasformazioni della residenza urbana*, in «Rassegna di Architettura e Urbanistica» n. 132, 2010.

Calzolaretti M. (a cura di), *Abitare in città. Questioni architettoniche, sociali, ambientali*, Gangemi, Roma 2006.

Castro R. e Denissof S., *Re-Modeler Métamorphoser,* Le Moniteur, Paris 2005.

Coccia F. (a cura di), *Recuperacorviale*, Kappa, Roma 2002.

De Cesaris A., *Lo spessore del suolo parte di città. La costruzione del sottosuolo condizione contemporanea dell'abitare la città*, Palombi, Roma 2002.

De Cesaris A. (a cura di), *Trasformazione/Riqualificazione* in «l'industria delle costruzioni» n. 373, 2003.

Droste C., Lelevrier C., Wassenberg F., "Urban regeneration in European social housing areas", *Social Housing in Europe II A review of policies and outcomes*, Londra, LSE London, 2008.

Di Giulio R., Bozinovski Z., Verhoef L.G.W. (a cura di), *COST C16 Improving the Quality of Existing Urban Building Envelopes - Structures (Research in Architectural Engineering Series)*, IOS Press,US 2007.

Druot F., Lacaton A. e Vassal J.P.plus, *Les grandes ensambles de logements, territoire d'exception*, Gili. Barcelona 2007.

Franz G. e Leder F. (a cura di), *La riqualificazione delle periferie residenziali*, Alinea, Firenze 2003.

Grecchi M. (a cura di), *Il recupero delle periferie urbane*, Maggioli, Milano 2008.

Hall P., *Regeneration Policies for Peripheral Housing Estates: Inward- and Outward-looking Approaches*, in «Urban Studies» n. 5-6, May 1997

Krantz B†., Öresjö E. e Priemus H., *Large Scale Housing Estates in North-West Europe: Problems, Interventions and Experiences*, Delft University Press, 1999.

Lévy-Vroelant C., Reinprecht C., Wassenberg F., "Learning from history: changes and path dependency in the social housing sector in Austria, France and the Netherlands (1889-2008)", *Social Housing in Europe II - A review of policies and outcomes*, Londra, LSE London, 2008

Malpass P., "Histories of social housing: a comparative approach", *Social Housing in Europe II - A review of policies and outcomes*, Londra, LSE London, 2008

Mandolesi D., *Demolire o rigenerare? Il caso di Tor Bella Monaca a Roma*, in «l'industria delle costruzioni» n.420, 2011.

Mandolesi D., *La rigenerazione dei quartieri residenziali nei contesti europei*, in «Rassegna di Architettura e Urbanistica» n.132, 2010.

Ouwehand A. e van Daalen G., *Dutch housing associations, a model for social housing*, DUP Satellite, Delft 2002.

Scanlon K., Whitehead C., *Social Housing in Europe*, Londra, LSE London, 2007

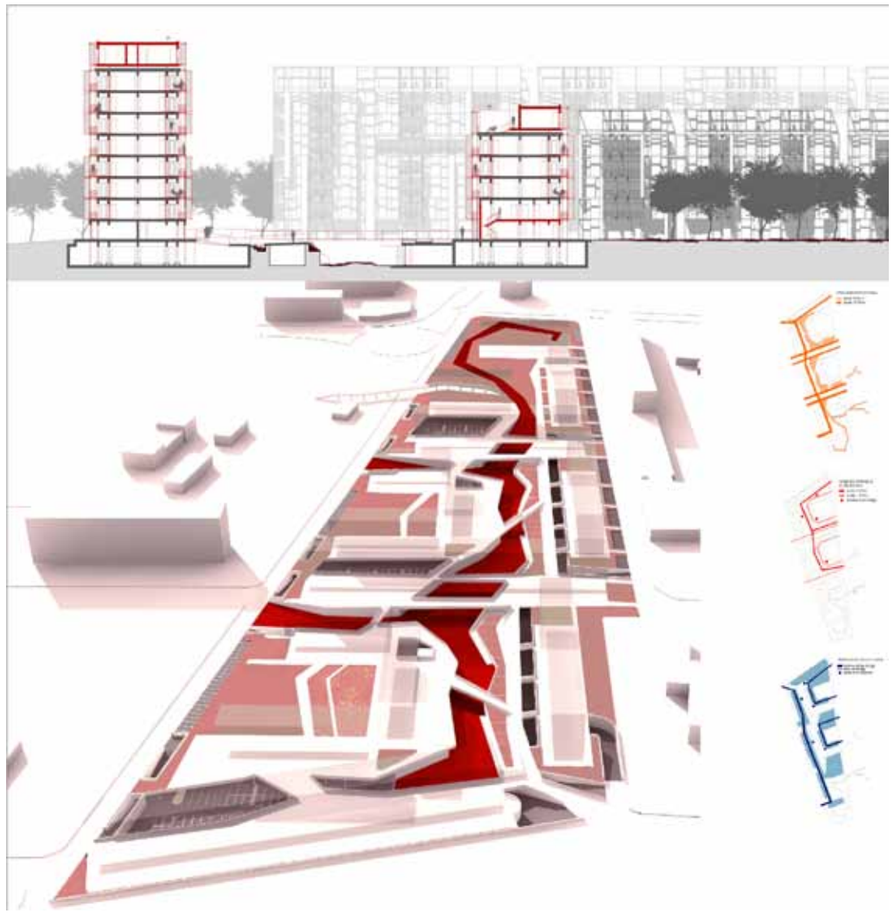
Spaans M., *The implementation of urban revitalization projects. An international comparison*, Delft: DUP, 2002.

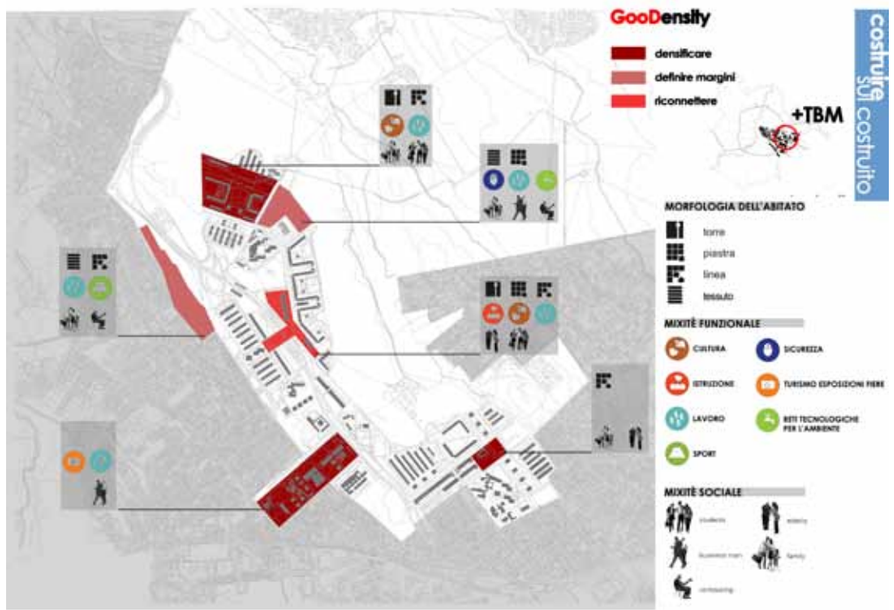
Stenti S. (a cura di), *Riprogettare la periferia. Scritti e progetti sul recupero dei quartieri di edilizia pubblica*, Clean Napoli, 2003.

Legenda

mandolesi_domizia.jpg1
Proposal for the regeneration of Tiburtino III in Rome by HousingLab (D. Mandolesi, L. Paglialunga, A. De Cesaris) e G. Di Giorgio, 2010. Overall plan and section of the design solution.

mandolesi_domizia.jpg 5, 6
Proposal for the regeneration of Tor Bella Monaca in Rome by HousingLab, M. Calzolaretti (director and scientific coordinator), A. De Cesaris, D. Mandolesi, M.T. Aprile, 2010-2011. New building systems to densify the neighbourhoods





Amelie Mayer - Ulrike Sturm - Peter Schwehr
University of Applied Sciences and Arts Lucerne, Schweiz

Transferring single-family home qualities to multi-family housing

1. Introduction

For many people, the single-family home is the symbol of optimal living quality. In combination with the steady population increase and its related growing demand for housing, this ideal con-tributes to a loss of around eleven hectares of agricultural land in Switzerland every day. For-ward-thinking stakeholders and developers[1] are therefore required to present solutions to reduce urban sprawl which are, as far as living quality is concerned, optimised in such a way that they offer advantages comparable to those of a single-family home. With this in mind, the Competence Centre for Typology & Foresight Planning in Architecture (HSLU – T&A) and the Competence Centre for Regional and Urban Development (HSLU – SA) have been collabor-ating since 2010 on 'transferring qualities of the single-family home to multi-family housing' (SFH/MFH), a project supported by the Swiss Commission for Technology and Innovation (CTI). This article gives an overview of the most important results and of the challenges identi-fied during the project.

2. Project aims and procedure

The aim of the project is to contribute to the deceleration of urban sprawl by constructing com-pact multi-family housing with single-family home qualities. With regard to future-oriented housing construction in this context, the following key questions arise: Which requirements need to be fulfilled in order to make multi-family housing attractive to potential single-family home clientele? Which criteria for planning and realisation can be deduced from this? How can the advan-tages of multi-family housing with single-family home qualities be communicated effectively?

To answer these questions, the preferences of those living in single-family homes are com-pared with the interests of stakeholders and public authorities whereby conflicts of interests become evident. Based on these findings, proposals are made to implement the preferences in multi-family housing, which not only consider the possibilities in the building itself, but also the requirements on the spatial and social environment. The results are collated in the form of planning instruments and communication guidelines.

3. Preferences of SFH occupants and their feasibility

Living preferences describe subjectively-assessed requirements on the particular qualities that are deciding factors in choosing a type of housing. The investigation differentiates between psychological factors (individual and immaterial requirements, e.g. the feeling of owning one's own home), social preferences (needs concerning social relationships within the neighbour-hood), spatial preferences (e.g. living space requirements), ecological preferences (e.g. low-emission materials, low energy requirements) and economical preferences (e.g. the need to own a single-family home as an investment) (Peter, 2009; as proposed by Schmitt et al., 2006).

In order to collect data on preferences relating to single-family homes, 22 persons took part in an exploratory study at the onset of the project.[2] These participants had already de-cided in favour of a single-family home, and their decision had been made recently. Whereas the first part of the survey aimed to discover the crucial reasons for buying a single-family home and its symbolic significance (open questions), interviewees were presented in the sec-ond part with a catalogue of criteria (standardised questions). In this part, it was possible to comment on the preferences that could be important when deciding in favour of a single-family home.[3] The third (partly standardised) part focussed on the preferences which had been rated as important in multi-family housing, and asked under which circumstances one would be prepared to move into multi-family housing.

Overall, the survey shows that psychological, social and spatial aspects play a major role in deciding for a single-family home. Criteria such as privacy, freedom to decide and design, be-ing close to nature, the number of rooms, child safety, hobby rooms on the premises and pri-vate outside areas are emphasised. Garages and storage rooms also appear to be important, as well as good relationships with the neighbours. This is almost as important as legal and financial independence. Proximity to urban life is another deciding factor, whereby respondents understand this to be a journey of up to 20 minutes.

It is interesting to note that coincidences are often a contributing factor in deciding for a single-family home (because a property was inherited etc.). Apart from this, many people think that single-family homes are less expensive than commonhold property.

To the question under what conditions would respondents be willing to move to multi-family housing, it is apparent that privacy is also understood to be adequate seclusion and sufficient sound insulation. It would also depend on the number of parties in the building. The majority of single-family homeowners would not be willing to live in a house with more than five to six parties. Many of them would consider living on the ground floor or the top floor, but not on the floors between. Multi-family housing would also have to be built to ecological standards and, in order to be attractive, be cheaper than a single-family home.

Based on the results of the user survey, six contractors and six officials[4] were inter-viewed. It was evident that the prioritised criteria of single-family homeowners were not only welcomed by property developers, architects and investors but could also be realised from a financial point of view, or were already being realised. Interviews with representatives from public authorities showed that densification was regarded as crucial. To promote this, a suffi-cient number of good planning tools are available. However, the political will is often lacking. For this reason, it is important to seek dialogue with local authorities and politicians.[5]

4. Indicators to evaluate SFH qualities in MFHs

Based on the interview results, the project team worked on quantifying the preferences of SFH clientele and the factors determining a move to multi-family housing. To do this, an indicator system was set up to evaluate single-family home qualities in multi-family housing based on the Federal Housing Office (FHO) Apartment Rating System (Federal Housing Office ed. 2000). The system includes reference values for realising multi-family housing with single-family home qualities and aids – as does the FHO – for planning, evaluation and comparison of projects. Planning is carried out using a checklist; the evaluation of qualities based on a calcu-lated utility value. It evaluates more than 40 criteria.

By default, criteria are divided into three categories; apartment, neighbourhood and location. They are represented by purpose, measurement method and measurement values. The measurement itself is done by allocating one to three points to each criterion. For example, if the number of rooms, which are kept relatively low, exceed the values, three points (with restric-tions) are also allocated. To facilitate the evaluation of single-family home qualities in multi-family housing, the majority of the criteria – based on the FHO's apartment rating system – were adapted. Four additional criteria were also established to account for the preferences of single-family home residents: Spacious rooms, privacy, outdoor areas where people can meet and freedom of design.

The case study analysis of 20 multi-family houses already constructed or in the planning stage, was carried out using the indicator system, which, in the future, will enable initial comparisons of single-family house qualities in one's own building project with existing objects.

5. Aspects of the realisation process of MFHs with SFH qualities

Using reference values from the indicator tool, several process-oriented implementation strat-egies can be formulated to promote the realisation of single-family homeowners' preferences in multi-family house. Six aspects have been singled out as follows:

Freedom of design for residents

As mentioned previously, single-family homeowners felt that co-determination during the plan-ning phase or freedom in design were the advantages of a single-family home. However, until now providing these qualities in multi-family housing was seen as problematic. The SFH/MFH project shows that one of the main differences between conventional condominiums and multi-family housing with single-family home qualities could lie in freedom of design. The principle of building groups can therefore be seen as a possible solution.[6] Building groups (also known as building collectives) are already well represented in Germany and Austria. Besides the fact that subsequent occupants can directly influence the design of their surroundings, they are accredited amongst other factors with the following advantages (Temel et al., 2009): In sharing the cost of the building plot between several parties and by not having broker and property developer fees, building costs are reduced by up to €800/m² for potential occupants. Occupants are involved in various negotiation processes which also contribute to a lively and stable neighbourhood.[7] Possibilities to adapt rented property at a later stage compen-sated for co-determination in the planning phase.

Diversity in construction

Within the scope of the SFH/MFH project, a wide-ranging state-of-the-art investigation exam-ined which buildings could fulfil single-family homeowners' preferences particularly well. It became clear that it does not depend on building type (courtyard houses, point block etc.) Con-sidering the defined project aim this is an important finding because it is evident from both the survey and from literature that single-family home clientele, who decide because of the pre-ferred location, is heterogeneous (Moser; Reicher, 2002 and Mayer et al., 2011). This means that the realisation of single-family home qualities in multi-family housing must, in order to ap-peal to a wide target group of potential clientele, also be possible in various forms. To repre-sent diversity, eight building types were investigated in depth to reveal how these must be de-signed in order to best fulfil the preferences of single-family house clientele (two will be presented below). The aim of the typological description is to establish a system for realising preferences which can be interpreted specific to the location and realised by the planners.

A point block is a type of multi-family house in which each apartment has a partially covered, private outside area (as a result of offsetting the balconies) and a garden. As a result, each apartment has a private area and a public outside area. At ground level, the garden is allocated to the ground floor apartment. Other gardens are positioned in appropriate areas of the build-ing: One is on top of the garage next to the house; another is on the roof of the building. All apartments have views in all four directions which promotes a feeling of space. The type of multi-family house is laid out for three parties to suit the privacy requirements of single-family homeowners.

A perimeter block is a type of multi-family house that combines relatively large-scale develop-ments (e.g. a school) with small-scale buildings, in this case, terraced houses. On the whole, a relatively high level of density can be achieved despite small-scale proportions. Depending on location, the terraced houses can be stacked or placed on the roof of a large-scale develop-ment. The advantage being that each party has a separate entrance which also meets the need for privacy and the 'feeling of owning one's own home'. The form of the perimeter block also creates a safe outside area for children that can be observed from the apartments.

In addition to the characteristics of multi-family housing types, planners receive a guideline for realising single-family home preferences in multi-family housing. This covers a wide range of options and includes the outlined single-family home qualities in multi-family housing construc-tion and organisation. It suggests, for instance, that in addition to the aspects mentioned above, privacy can be promoted by reducing the number of parties per entrance, offsetting outside areas, considering targeted room allocation and providing above-average sound insula-tion. In addition to the examples given, demands for spacious outside areas can be met by varying the orientation of apartments into the outside space or by integrating garden elements into communal outer areas.

Suiting the location

Considering the versatile implementation possibilities of the preferences described, it is im-portant to adapt multi-family housing projects to suit the location. The following points are fun-damental:

– Living space

In multi-family housing with single-family qualities the living space can vary. In the housing types outlined in the project, apartments can be compacter or more spacious to suit both the location and clientele.[8]

– Volume and number of floors

Multi-family housing with single-family home qualities can vary in volume and in the number of floors in accordance with the location. This ensures that each building is sympathetic to the surrounding area, both in scale and aesthetically, and contributes not only to quantative but also to high quality densification.

– Arrangement of the ground floor

Depending on location, ground floor areas oriented toward the building entrance can be designed as private or semi-private spaces (e.g. as common rooms or ateliers). Private areas must however be shielded from semi-private areas using dividing features, or by landscaping the terrain.

Locations are limited as follows: To meet the requirements of potential single-family home cli-ents, multi-family housing with single-family home qualities are situated in agglomeration communities rather than in the city. They are not directly in the centre, but still in a central position. A walking distance of five to ten minutes to the next public transport stop is ideal.

Adapting living space to suit different stages in life

If the apartments in multi-family housing with single-family home qualities are adaptable to different stages in a user's life, the long-term decrease in population density that invariably occurs in traditional single-family housing areas can be prevented. Two persons often occupy spacious houses that were once inhabited by a family (e.g. after the children have moved out). This contributes significantly to increasing space per person (bfs; bafu, 2007). In contrast, apartments designed to allow a conversion into two units with minimum effort, not only promote the reduction of space per person but are also explicitly good publicity because in terms of flexibility they often have an advantage in comparison to typical single-family homes. If areas are separable by floor, it is possible for people with limited mobility or no desire to maintain large living spaces and outside areas to live on one floor.

Dealing with prejudice

Whereas urban dwellers can easily imagine living in multi-family housing, for traditionalists, the single-family home often represents the realisation of a lifelong dream with strong emotional ties (Moser; Reicher, 2002). Local authorities are also often prejudiced in their views, as they expect higher tax revenues from the construction of single-family homes. Target group oriented marketing which points out the advantages of multi-family housing and overcomes prejudice (for example the assumption that single-family homes are less expensive to run) is crucial if single-family homeowners are to be motivated to move into a multi-family house. The main challenge is to simply and clearly convey the advantages and/or qualities offered by multi-family housing.

Besides communicating on an emotional level, where for example 'model projects' can be used to illustrate the qualities of single-family homes and to generate 'word of mouth', communication can be promoted on a rational level. For this purpose, the EFH/SFH project investigates to what extent multi-family housing more closely corresponds to demands for ecological, economical and social sustainability than single-family homes. It is clear for example that addi-tional rooms for rent give multi-family housing an advantage as far as social relationships are concerned. Occupants can sporadically rent such rooms without having to pay for their contin-ual upkeep as in single-family homes. Apart from this, it is possible to offer a wider choice of children's activities in outside areas because there is more space than in individual gardens. There are also ecological advantages: A multi-family house consumes less grey energy be-cause the proportion of building envelope/m² of living space is less in comparison to a single-family house. Construction costs - opposed to widespread belief - are reduced because main-tenance and opportunity costs are less. Local authorities often benefit from higher tax revenue per m² in comparison to areas with single-family homes (Schneider; Peyer for the building authority of the canton of Aargau, 2011). With this in mind,

compact living could be promoted politically and encouraged with relevant financial incentives.

Guidance in the implementation process
Multi-family housing with single-family home qualities contribute to densification in two ways: They allow a better use of land in built-up areas (e.g. in the case of new-build replacements). The construction of multi-family housing on greenfield sites that have recently been granted planning permission generally enable a better use of land.

However, experience shows that local authorities often need assistance and rely on further information with regard to densification issues. The SFH/MFH project outlines how a densifica-tion process with multi-family housing could be developed and shows which services could by provided by consultants. A sound potential assessment is especially important as well as de-tailed analyses of densification areas and their degree of density (which depends heavily on the overall appearance of the locality). To encourage acceptance, it is also necessary - particu-larly for small-scale and selective densification measures - to include house and property own-ers. As soon as local authorities have acquired the necessary expertise regarding densifica-tion, a special information point could be set up to answer questions.

6.Notes

[1] Building contractors, architects and investors
[2] An exploratory study is undertaken in cases where relatively few findings and research are available in the subject matter. Exploratory studies are a detailed description 'of phe-nomena and their influencing factors, (…) as well as the exploration of phenomena about which little or nothing is known'. (Weischer, 2007) For this reason, the choice – not num-ber – of respondents was decisive (as opposed to quantitative surveys). Gender, family status and age were taken into consideration in selecting participants for the project. A further selection criterion was the geographical location of the single-family home; to rep-resent mainly peri-urban areas and agglomerations in three regions (Zurich, Lucerne and Basel). Interviews were acquired through the 'Schweizer Baublatt', a weekly publication which publicises building projects.
[3] Options: vital; quite important; not so important; of no importance whatsoever
[4] Representatives from public authorities, the Swiss Federal Housing Office and regional de-velopment experts
[5] Details of the interview results can be found in Mayer et al., 2010
[6] Building groups earmark a design process in which the individuals involved get to know each other in the early stages. A distinction is made between self-organised and profes-sionally supervised groups, whereby the difference – outlined in simple terms – lies in the procedure. Whereas a self-organised group of potential residents team up and com-mission a planner to realise a building in line with their individual ideas, in a professionally supervised group an architect searches for a building plot, drafts the design and then looks for a group of residents who participate in planning the established 'basic struc-ture'. (Temel et al., 2009).
[7] This is true of Freiburg in Breisgau where two areas were newly developed between 1980 and 2010. One of them was the new district of Rieselfeld where more than 100 building group projects were realised. A satisfaction survey conducted in 2010 showed that al-most 86% of occupants were satisfied or very satisfied with their living situation. The child-friendly environment and social interaction were praised highly (Schings, 2011).
[8] As a result, the different requirements of clientele tending either toward urban or rural envi-ronments can be satisfied. Multi-family houses can be therefore also considered as seri-ous alternatives in agglomeration communities (especially in cases when the economic benefits in maintenance costs and opportunity costs are clearly communicated).

7. Bibliography

Bundesamt für Statistik, *Bundesamt für Umwelt (bfs; bafu) Hrsg., Umweltstatistik Schweiz. In der Tasche*, Neuchatel, 2011

Bundesamt für Wohnungswesen (BWO) Hrsg., *Wohnbauten planen, beurteilen und verglei-chen. Wohnungs-Bewertungs-System. Ausgabe 2000. Schriftenreihe Wohnungswesen. Band 69, Basel, Bundesamt f*ür Wohnungswesen; 2000

K.I.O.S.K; Projektgruppe Rieselfeld, *Eine Zeitreise über das Rieselfeld*, http://www.freiburg.de/servlet/PB/menu/1179889_l1/index.html, 12.01.2012

Moser W., Reicher D., *Was ist so schön am Eigenheim. Ein Lebensstilkonzept des Wohnens,* Graz, 2002

Mayer A., Sturm U. et al., *EFH/MFH. Zwischenbericht 1*, Hochschule Luzern - Technik & Archi-tektu, CCTP Competence Centre for Typology & Foresight Planning in Architecture Luzern, 05.05.2010

Mayer A., Sturm U. et al., *EFH/MFH. Zwischenbericht 3*, Hochschule Luzern - Technik & Archi-tektur, CCTP Competence Centre for Typology & Foresight Planning in Architecture Luzern, 04.11.2011

Peter C., *Vorstudie über Wohnpräferenzen (zukünftiger) Einfamilienhausbewohner/innen*, Hochschule Luzern - Soziale Arbeit, 2009

Schings C., *Sozialraumanalyse Freiburg Rieselfeld. Befragung zur Zufriedenheit der Bewoh-ner/Innen*, Institut für angewandte Sozialwissenschaft e.V., Freiburg im Breisgau, 2011

Schmitt J. et al., *Einfamilienhaus oder City? Wohnorientierungen im Vergleich*, Wiesbaden, Verlag für Sozialwissenschaften, 2006

Schneider, Peyer i.A. des Baudepartements des Kantons Aargau, *Kommunale Raumplanung zwischen Aufwand und Ertrag. Finanzielle Konsequenzen siedlungsplanerischer Massnahmen*, Baudepartement des Kantons Aargau, Abt. Raumplanung, 2011

Temel R., Lorbek M. et al, *Baugemeinschaften in Wien. Endbericht 1. Potentialabschätzung und Rahmenbedingungen*, Wien, 2009

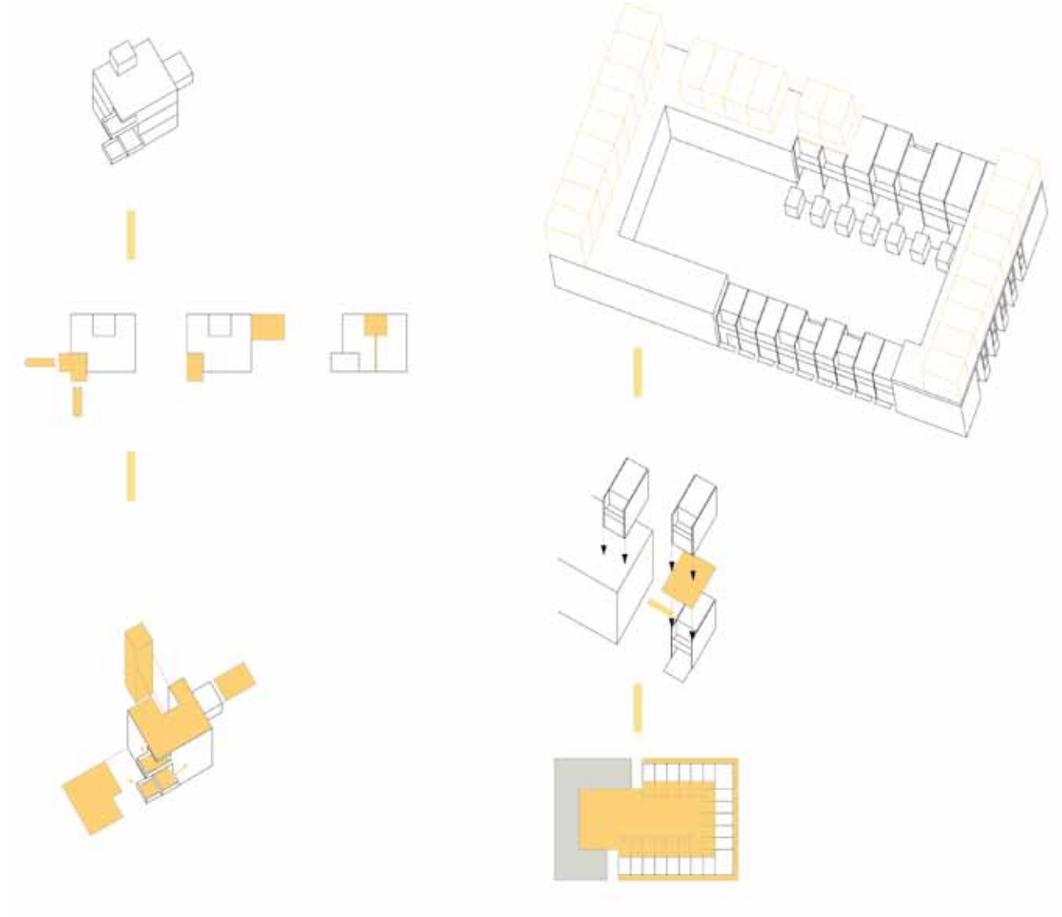
Weischer C., *Sozialforschung. Reihe UTB Soziologie 2924*, Konstanz, UVK Verlagsgesellschaft, 2007

8. Legenda

Image 1: MFH-Typ Point block with apartments and MFH-Typ Perimeter block

MFH-Type: Point block with apartments
Number of storeys: 4
Number of inhabitants per building: 12
Number of apartments per building: 3
Number of apartments accessed per entrance: 3
Site coverage ratio: ca. 0.6

MFH type: Perimeter block
Number of storeys: 4
Number of inhabitants per plot: 110
Number of apartments per plot: 21
Number of apartments accessed per entrance: 1
Site coverage ratio: ca. 1.2



Manlio Michieletto
Università di Bologna, Italy

Compose the siedlung: the project of Niddatal (1925-1930) vs the project of Riedberg (1997-2017) in Frankfurt

"The past is never dead. It's not even past".
William Faulkner , Requiem for a Nun, Act I, Scene III

"*… wir brauchen Luft und Sonne: das ist die neue Gartenstadt, das neue Haus, der Garten und die Natur. Wir brauchen Ruhe: das ist die Wohnung".*
Franz Schuster, Das Neue Frankfurt, Heft 5/1926-27

The context in which the research work lies, is the work of Ernst May with regard to the project Siedlugen "Niddatal" (1925-1930), that is Praunheim, Römerstadt and Westhausen compared to the new Riedberg Siedlung (1997-2017) in Frankfurt.
Here it is important to demonstrate the "continuity" rather than the "fracture", in the time, between the projects on the Nidda and the latest works concerning the "Housing and the shape of the city", following a precise idea of urban planning, from the living spaces to the city.

The research aims, as its principal objective to find a f*ormal structure*, with a high degree of generality, to use for the analysis of settlements based on a very specific archetype, the "Angersiedlung". An archetype that allows, in the past as in the present, 1925-2017, to organize the elements of the single composition, the spaces and the housing, and also the elements of the city, the Siedlungen (Residential settlements), to form the Trabantenstadt (Satellite City).

By *formal structure* it is here meant that structure that substantiates the work, that rules and orders in depth, depth that you can grasp, read and understand only through analysis of compositive type. Referring to the structural aspects of the form, then, means to refer to an internal structure and a specified set of rules that characterize and qualify it. It also means to assign a precise role to the form[1].

On this subject Martí Arís speaks of a form close to the concept of metaphysics, as opposed to the concept of matter. The form then becomes the deep structure, hidden but intelligible of a work, behind non-sensitive aspects of an architectural event, and related, in fact, to a sort of logical frame-space object, a code inscribed in the matter[2].

Ultimately it differs from the concept of shape, namely the visual and immediate implementation of an object, or architecture, to then be seen in the context of the etymological form.

Take for example the Römerstadt Nidda Valley, nestled in its sinuous shape with the Bastions, it does not provide information on its structure. The stated objective is beyond the sensible form of intervention, in the search for typological identity behind its formal structure.

The typological identity provides a clear description of the Siedlung, in relationship to an architectural reasoning that occurs independent of location, time, use and cost. Reasoning that lies in the materiality of urban buildings, but it is recognized at the same time as both the abstract principle of law, as a law of uniformity and rhythm[3].

The Siedlungen in time are characterized, therefore, by the connection of different elements, which are identified by types. In turn, the types are the result of previous transformations, "in the conviction of more general knowledge that only the link with the past experience creates opportunities for progress"[4]. In this context, the link with the past experience, assumes full value through memory and its invention, which in this case translates into the revival of the Anger, or public space identified by a road passing through and on which the appropriate, characteristic and typical elements of the composition are grafted according to this model. The strong link with the history shown in the settlements on the Nidda recurs in the project of Riedberg as a continuation of a particular way of composing the types.

The analysis of the types, or the relationship established, and of the knowledge, which results in the analysis of composition of the work of architecture, as said, leads to an unequivocal result: *the formal structure.*

Durand says that the elements of the composition are for architecture «what words are for speech or notes for music, and without the full knowledge of these it would be impossible to proceed beyond»[5]. A real typological taxonomy, therefore, that allows to subdivide an architecture, the Siedlung, in recognizable and classifiable elements.

Also Martí Arís defines the pieces of the composition as "elementary structures, conceptualized forms that possess a defined identity, and may interact between them generating more complex structures.

Many architectural works may be analyzed as the result of certain processing operations from one or more elementary structures: «[...] So in architecture, as in any human activity, just starting from the elemental components is explained the complexity of the result»[6].

Summarizing, the integration between public and private spaces related to the wide variety of types and housing solutions, around an archetype, the Anger, leads to define the shape of the Siedlung and the disposition of the Siedlungen leads to the shape of the city.

The compositional modus rational, analytical and repeatable of May, becomes the method recognizable in the realizations of the Nidda Valley. This modus is embodied in an idea of Architecture composed of elements, parts specifically identifiable and analyzable.

A discourse on the composition by elements cannot be confined only to the formal structure, ie to a structure that holds the parts together; these must be subject to an analitical study to show its origin and value.

The term "value" is taken in its Latin attribute of *valere*, ie of meaning, of having efficacy in relation to certain purposes. Here you search for the meaning of these elements in relation to the unitary vision of the Siedlung, as a settlement. The work of architecture as an expression of an intrinsic urban value that the elements must represent on the scene of the city as a concatenation of narrative units or themes, if we talk about narrative sequence, which in turn are metaphors of so many themes and places. The primary elements which compose the architectural fact, are derived from the selection within an existing repertoire.

A repertoire of types, which May consolidates in the years[7], and applies in Frankfurt under the banner of the modern, to tie them to the "own time". The architect shows, from the experience of Das Neue Frankfurt, the will of a simplified language where the simplicity is attributed the meaning of complexity resolved, resolved in stereometric volumes, pure and standardized.

It is necessary to consider each project, the Siedlung as "a different solution, more advanced, of a theme of architecture"[8], as the result of a series of specific trasformations.

In the case of Nidda Siedlungen, May develops the theme of the concatenation, because «it is a usual procedure in those architectures that exhibit clearly the complexity and fragmentation of their components, avoiding any attempt to subject them to a single and global law »[9]. According to this approach to the project, a series of heterogeneous formal structures are put in connection, each of which is called to keep its own typological individuality.

Each element of the Siedlung, in fact, has its own corpus of characteristics, which make it intelligible within the complex; characteristics which remain evident in all assembly processes. Every single element is always conceived as part of a system and this system is the settlement in its entirety and completeness.
It follows, however, a strong basic contradiction: the individual parts are dominated by a fragmented nature, heterogeneous, but are unified, held together by a complex world of relationships. These elements are not independent or unrelated to a common framework, but relationed in accordance to various forms of "articulation, compenetration and solidarity".

Thanks to them, the whole ceases to be a mere disintegrated sum of parts and acquires a specific internal cohesion. Each element appears, thus, subordinated to the structure, without dissolving in it, because the structure, as seen before, is defined by the shape of elements that composes it[10].

The typological concatenation summarizes in a single projectual strategy this network of relationships, translating the tensions between the parties in a finished and intelligible balance.
The elements are not ultimately chosen and arranged in a disorderly or random way in the composition, but follow a predetermined rational consequentiality. The Siedlung explains itself, and the work of architecture tends to unitarity, conceived as a series of spatial types in logical juxtaposition.

The concept of unity, to grasp the settlement as an concluded manufact, is clearly expressed by May, through drawings and sketches, on several occasions. At a conference held in Frankfurt in 1929 to illustrate the program of work so far completed, Ernst May compares the Siedlungen "to the honeycomb of bees", in which "the sum is composed of the same residential elements"[11], ie the same types. On the pages of the magazine "Städtebau" a clear description of the character of the satellites is provided: "[...]Particular importance is attributed to the fact that, thanks to the predetermination of its maximum extension, the satellite city - on completion of its expansion - is separated from the surrounding green through precise and definitive margins.

Like the ancient traveler, entering in the city through the embankments and ditches or through the town walls, he learnt to recognize the medieval city that appeared before his eyes as a whole by well-defined edges, also the satellite city, surrounded by rows of grouped constructions or by streets, will announce its peculiarities of a cell already set with its own boundaries. Groups of tall buildings, that are built on the exits of the roads on the boundaries of the satellites, will also effectively highlight the concept of entity delimitation"[12].

Continuing in this review on the unitarity of the settlements, we must remember the words of the released radio interview of 1966, which provides an interesting investigation on the compositive moves concerning the Siedlung Römerstadt: "May: «Yes, the Siedlung Römerstadt, or rather the famous project called "Niddatal", in all its entirety, at the time I built, it shows the cubic blocks and designs in a modern form and in fact the whole mass of buildings was designed as a single body, to put there a new society by providing parks, gardens and other equipment. For this reason different colours have been used, different heights, in order to assume the form and the value of a city. I would like to especially emphasize this character, because the Siedlung Römerstadt has the characteristics of a modern Siedlung, but it has full respect of the urban form. The Siedlung is built on a slope and through the terracements, and orientation of each sector obtains a precise and clear scan (composition), which determines the shape of everything, which can easily be embraced at a glance,[...]»"[13].

This urban character dominated by the unit, to grasp the city before the houses, emerges clear and loud from the words of May. Forty years after the construction of the Siedlung, he remembers to use a modern language for the modern man, that had to recognize in the settlement a collective project, being part of history, in the belief that architecture is a matter of knowledge that continues in the furrow of tradition.

Here, the typical features of the city are then proposed again: the colours, different heights, the hierarchy between the buildings and spaces, the proportions and urban dimensions. The confirmation of ancient rules contributes to determine a form, a city formally finished, that "we can easily embrace with a glance", recognizing it.
The practice discovered in the project of Römerstadt, and even earlier in the settlements in Silesia, is, as said, that of the Angersiedlung: Anger, or square, collective place and Siedlung, settlement[14].

The existing main road, a symbol of permanence, a past that we still practice, it becomes the public space, on which you place the collective buildings, commercial activities and homes. The latter are prepared in a comb fashion respects to the axis of the road so as to realize private courtyard spaces.

In 1927-28 the first phase of Praunheim was realized, one of the initial Siedlungen of May in Frankfurt, a "satellite " that is built and composed along the Damaschkeanger[15]. Here again is the main road, that widening and expanding its space becomes the place dedicated to combinaison and assemblage of civic life. In Römerstadt the Anger is represented by the Hadrianstrasse and by the combination of elements which constitute it and which state the character of the center of the composition.

Paraphrasing the words of Agostino Renna that refer to the square, we can say that the Siedlung exposes itself in the street and the street is the mirror of the Siedlung and its representation. It is inspired by an idea "of progressive construction over time, that manifests itself in the form" of the Siedlung as city, "accomplishing the Siedlung however through that simultaneous and comprehensive act which is the project"[16].

The Niddatal Siedlungen appear as an opera of a past time, in their most intimate costruction, but in the guise of an architectural language absolutely and deliberately modern. Using, in this case, the words of Aldo Rossi it can be said that the Siedlung is in its history, in its permanences and in its memory, and breaks into the present, dressed in white, observed i.e. in the light of material reality of the present age.

The Siedlung "as a place of knowledge, in which going through that, you recognize the functions and values of our life"[17], because in the collective character of the settlement, there is the main element for its understanding, through which the work manifests its essence speaking for itself: what it is.
The mound six feet long and three feet wide of Adolf Loos makes us especially serious but above all aware that "someone is buried here": this is architecture.

Architecture as a fact of knowledge, is considered by Aldo Rossi as the most intense and most pure experience, because "it is identified in the manufact; then only in the historicity of the architecture occurs that separation between the original element and forms which the ancient world seems to have solved forever, and from which derives the character of permanence that we recognize in those forms. Even for this" - continues Rossi - "All great architecture reproduce the architecture of antiquity as if the ratio is fixed forever; but each time it proposes itself with a different individuality. "[18]

What is the state of art today?
The Siedlung Riedberg is one of the projects that aspire to build a new piece of city, of satellite city, consisting of seven quarters, in which 15.000 inhabitants will find place.
Pretext for the Siedlung realization was the displacement of some faculties of the Johann Wolfang Goethe Universität, that with its 8.000 students and 1.800 workers form the so-called "Campus Riedberg".

Around the Riedberg Alle, the main road or Anger, are located the elements of the composition, following a determinate and consolidated formal structure. The main road becomes, once again, the spine, which holds together all the components and which orders the relations of these.
The whole settlement is characterized by the used of different types and housing solutions, and also by a proper integration between public and private spaces.

The Siedlung is on the one hand a collective manufact, identity and memory, and on the other, a urban manufact which is identified in the formal values of the places and in the quality of space through measurements, dimensions and relationships[19].

Manlio Michieletto
Università di Bologna, Italy

Notes

[1] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 11.
[2] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 80.
[3] Sulla nozione di tipologia: De Sola'-Morales M., *Dalla memoria all'astrazione*, in «Casabella», 1985, n°509.
[4] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 11.
[5] Jean-Nicolas-Louis Durand elaborates, in the late eighteenth and early nineteenth century, a systematic both clear and mechanistic classification of buildings and their components that, in his day, were the basic repertoire of architecture, and shows the endless possibilities of combination. At the basis of his reflections there was firstly the dual postulate of the functionality and of the economicity. Durand approached himself so to the functionalist idea of beauty of the useful. Moneo R., *La solitudine degli edifici e altri scritti*, U. Allemandi, Torino, 1999, pp. 56.
[6] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 116.
[7] Radio interview, Berlin, 1966, page 328; see also: Zanchettin V., *Come diventare Moderni*, in «Casabella», April, 2001, n° 688, pp. 84-91.
[8] Monestiroli A., *L'architettura della realtà*, Allemandi, Torino, 2004, pp. 20.
[9] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 120.
[10] Martí Arís C., *Il tipo*, in *Dizionario critico illustrato delle voci più utili all'architetto moderno*, C.E.L.I., Faenza 1993, pp. 189.
[11] Mohr C., Mülller M., *Funktionalität und Moderne. Das neue Frankfurt und seine Bauten 1925-1933*, Verlag Rudolf Müller, Köln, 1984, pp. 41, « […] Die Wohnsiedlung unserer Tage wird, änlich den Bienenwaben, die Summe gleicher Wohnungselemente ausmachen». May E., Die Frankfurter Wohnungspolitik, Vortrag, Frankfurt, 1929.
[12] May E., *Stadt-erweiterungen mittel Trabanten*, in «Der Städtebau», 1922, pp. 51-55.
[13] May E., Radio Interview, Berlin, 1966. Complete translation: pp. 328.
[14] Manfredo Tafuri about the references for the design of the Siedlung says: " The peasant Siedlung was indeed the first conceptual core from which would match the urban idea of May". In: Tafuri M., *E. May e l'urbanistica razionalista*, in «Comunità», 1964, n° 123, pp. 68.
[15] Damaschke Adolf gives the name at the Anger of Praunheim, choise that was not arbitrary. Theorist of the land reform, founds in March 1915, the Movement for the home to the fighters (Kriegerhaimstätten). This event allows a resonance hitherto unknown to the issues of city reform and of house reform. Damaschke A., *Kriegerheimstätten. Eine Schicklsfrage für das deutsche Volk*, Verlag Bodenreform, Berlino, 1917; Damaschke A., *Der Neuaufbau der deutschen Familie und die Wohnungsfrage. Kriegerheimstätten*, Falken-Verlag, Darmstadt, 1917.
[16] Martí Arís C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990, pp. 122.
[17] Semerani L., *La casa: forme e ragioni dell'abitare*, Skira, Milano, 2008, pp. 62.
[18] Rossi A., *L'architettura della città*, CittàStudiEdizioni, Torino, 1995,pp. 143.
[19] Dal Fabbro A., *Astrazione e memoria. Figure e forme del comporre*, CleanEdizioni, Napoli, 2009, pp. 9.

Bibliography

Grassi G., *Das neue Frankfurt 1926-1931*, Edizioni Dedalo, Bari, 1975.

Martì Arìs C., *Le variazioni dell'identità. Il tipo in architettura*, CittàStudiEdizioni, Torino, 1990.

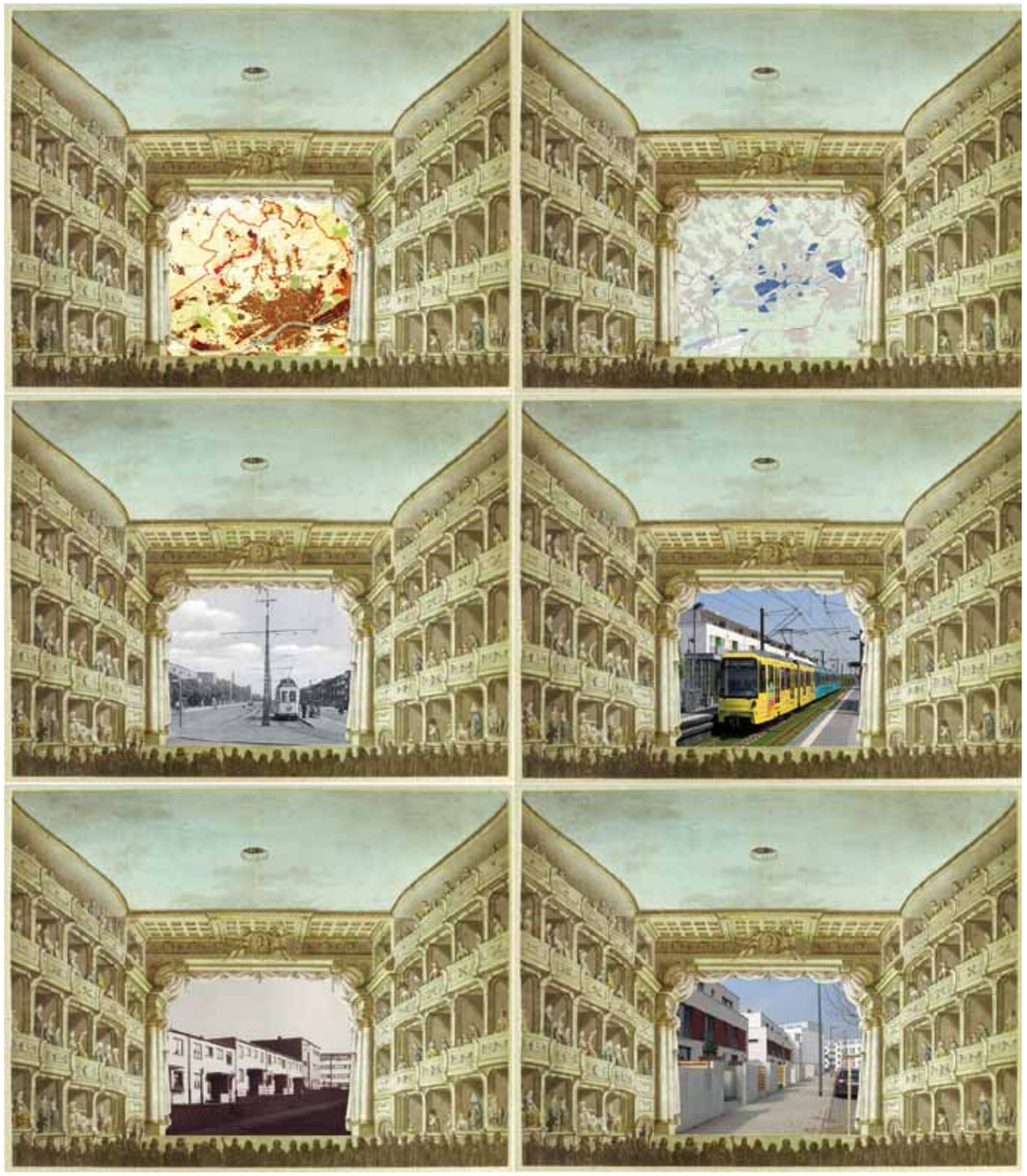
Mohr C., Mülller M., *Fünktionalität und Moderne. Das neue Frankfurt und seine Bauten 1925-1933*, Verlag, Köln, 1984.

Monestiroli A., *L'architettura della realtà*, Allemandi, Torino, 2004.

Pavese C., *La luna e i falò*, Einaudi, Torino, 2005.

Rossi A., *L'architettura della città*, CittàStudiEdizioni, Torino, 1995.

Michieletto_Manlio1 - Capriccio: Stadtentwicklung Frankfurt, 1925-1929
Michieletto_Manlio2 - Capriccio: Stadtentwicklung Frankfurt, 1997-2017
Michieletto_Manlio3 - Capriccio: Siedlung Praunheim, 1929
Michieletto_Manlio4 - Capriccio: Siedlung Riedberg, 2011
Michieletto_Manlio5 - Capriccio: Siedlung Römerstadt, 1930
Michieletto_Manlio6 - Capriccio: Siedlung Riedberg, 2011



Marina Montuori - Barbara Angi - Massimiliano Botti - Olivia Longo
Università degli Studi di Brescia, Italy

The rational maintenance of social housing (with a warlike modesty)

There are many valuable subsidized housing complex, also designed by Italian Masters of the twentieth century, under conditions of physical and/or social degradation: for example the specimen cases of “Corviale” in Roma, “Le Vele” in Scampia (Napoli), Zen in Palermo, the towers of San Polo in Brescia. For each of these have been raised a debate that pitted the parties of demolition and recovery.

In the Italian peripheries there are also many artifacts or neighborhoods with similar characteristics, but not “copyright”, which survive in a state of progressive decay, as if they were subject to a kind of collective “removal”. The operations of regeneration, when it happened, were often limited to maquillage or minimum technological adjustments to adapt to the needs of energy saving facades – even recurring to so-called “District Contracts” of the first (1996) and second (2001) generation – but have rarely been extended to all the action of the surrounding environment.

The framework of actions implemented so far in Italy is also far from being uniform, returning a heterogeneous panorama of varied techniques and tactics, interweaving demolition and works on public space and on the building’s morphology, with modest results in terms of urban integration. On the contrary in France, UK and USA, have been adopted with increasing frequency practices of *remodelage* (the term was coined by Roland Castro)[1] or reconfiguration of the envelopes according to assumptions similar to those made by Druot, Lacaton and Vassal[2]. From the Nineties to today, redevelopment of social housing estates have multiplied, and have made the “modeling” of the apartment buildings and outline spaces a strategy for urban form, we might say, of feasibility. A theoretical framework whose formalization, often circumvented by current architectural production even high-profile (with some exceptions), is indicative of a critical study which is interesting by itself, because able to give form and substance to what future architectures will make real. Since the ones we are talking about are “breaking” or better “thesis” texts, they operate forces and start shortcuts (the cost of interventions, to be called at least optimistic, the insistent focus on some aspects and potential of existing artifacts that are intended to be modified, and that actually concern only a part of the artifact in itself, etc.). In other cases, the proposals appear to our eyes enforced only because they developed in a normative – and fiscal – context different from the Italian one.

This stated, one needs to understand the ambits in which to move, because research takes an operational nature in a concrete application context. In other words: we believe that’s no need of another handbook that operates in a mechanical way a systematization of strategies derived from out-of-context examples, which in many cases could reveal as not applicable. Nor do we think it is useful to create a *new manifesto* that repeats with other words concepts that have already been effectively expressed elsewhere. These concepts are not yet universally shared, and this is a matter on which it would be useful to ponder, but we think that the degree of belief is directly proportional to the concreteness of the proposed assumptions.

In this sense, we’re able to convince an Institution that “remodel” a building is cheaper than demolishing *tout court*, only if we can make a list of real possibilities, without modification of the regulatory framework. We suggest that this obstacle has to be taken as insurmountable, considering our country’s hypertrophied authorization landscape and the complex process to obtain the necessary funds, etc.
We think, however, that the spark of utopia of the manifestos of remodelage must in any case be preserved, otherwise the any research will decay into a mere exercise in the application of the already known, only deprived of that essential dose of recklessness

The current legislation on measures to promote the adjustment of the energy performance of buildings[6], which implements an EU standard and supports the so-called Piano Casa 2011, provides some dimensional tolerances for the thickness of the envelope relative to the calculation of gross floor surfaces (SP or SLP), a parameter that in many Italian Municipalities has in part replaced the notion of “Volume”. As is known the SP is calculated by including the first 30 cm of the housing perimeter, excluding additional thickness to a maximum of 25 cm (the so-called “coats” or construction of ventilated roofs or walls), so they can be put in place without making the intervention becoming burdensome for designers and manufacturers, in terms of area permitted by the planning parameters. The same discourse is valid also with regard to the calculation of the buildings heights: the rule previews a delta of 15 cm added to the canonical 30 cm (although a slab thickness of 30 cm now belongs only to historical handbooks) without leading to a greater “virtual” height of the building, subject to the interior height of 270 cm.

All this is true, but only for new constructions.

In relation to the “redevelopment energy interventions” it is expected an increase in thickness of the perimeter, even when the realization of it conflicts with the boundaries or roads distances respect, while the greatest thickness of the floors is not allowed, so as exceptions to the minimum interior height do not exist. This excludes in many cases the intervention on existing floors already far apart from the required minimum standard since the introduction of additional technical elements – sometimes really necessary – would cause an unacceptable (for Regulatory…) decrease of inter-floor distance. The same goes for any technological ceiling, or insulators. Consequently, a whole industry of possible interventions is not possible.

Many interventions upon which we look favorably include the expansion of building parts. “Warm towers”, entire walls that translating, offer some more square meters to living situations based on outdated standards, elevations, etc. allow in principle to design ex-novo the pre-existing, providing answers also on

The critical reading of the manuals available today in Italy[4] about this research field (meaning here the manuals of Italian production, not the material derived from researches or studies conducted in other countries) allows some preliminary thoughts.
The work is usually settled on two streams, moreover shareable: the filing of virtuous examples, most of which are works carried out in EU countries; the formation of a schedule of possible interventions on the existing buildings. The first trend is likely to be expanded with exponential growth, since over time the interventions can only – hopefully – increase in number. The second is more “closed”, since these are lists of possible attitudes on operational strategies that arise from its base: add (parts of buildings, portions of exterior surfaces, air-conditioned layers more or less technologically advanced, internal partitions, etc.), *subtract* (demolition localized for entire plans or sectors or types of products or partial demolition of partitions, load-bearing or not, to implement such changes of the housing type, etc.). Or the mingling of the two strategies.
Other texts, rightly considered exemplary, do not represent the result of others’ work analysis, but reasoning on possible courses of action[5], applied to case studies even if still in draft

1.the reintegration of social housing in the city’s settlement;
2.the rendering of a complex image of the neighborhood, through actions of densification/completion of blocks with the inclusion of non-residential functions;
3.the qualification of the living space;
4.offering different types of accommodation to suit the changing needs of contemporary life;
5.upgrade of building artifacts, which will remedy its possible, multiple obsolescent elements.

The *remodelage*, if applied in our country, may allow structural adjustments to earthquake standards, plant integration, retrofit of accessibility, rational management of the complex problem for disposal of waste generated from the demolition of building components[3], in the end, the improvement of overall living conditions. All these actions may also include a rethinking of housing types and a global redefinition of open spaces.

formal obsolescence of many high density residential buildings. These strategies, that only with the introduction of the Piano Casa 2009 have found a first and controversial regulatory road, may be adopted when the referent is unique. That is, there is a relation with a single owner. This is because in the case of a subdivision of the property – the case of dwellings which have been bought over time from inhabitants, is not uncommon in Italy – the entity that would account for the majority of the property cannot use the right of others to expand but is entitled to do so only with regard to his own share. That’s why, if you want to refer to consolidated examples, it appears closer to the Italian situation the proposal historicized à la Lucien Kroll[7], whose proliferation of additional volumes photographs the factual situation quite well, even before a figurative will. Only in specific cases can be retrieved an “orderly” image which can offer for example buildings of the Seventies made in the former DDR returned to present-day thanks (also) to new fronts of highly specialized functional unit composition[8], however, belonging in their entirety to a single actor.

These and others may be the constraints within which to develop a series of realistic strategies. In our opinion, the scope of action should be defined by a work of screening of the existing legislation, which functions as a sort of narrow sieve for the possible available options.

To trace guidelines based on a method applicable in most cases, because repeatable in its main steps (which may here be summarized as a history of the building from different points of view: static, performance-energy, typological, the ownership status and employment of artifact by users; identification of possible financial strategies; development of the intervention).
To identify possible intervention scenarios therefore, at this stage of research, we should work in corpore vili, that is, in practical cases, attempting an operation similar to profiling commendably proposed by others. An operation that starts from the project, and that from the attempts the project entails derives some rules probably applicable to similar cases.

It proposes a subdivision for different scales of artifacts. This again to calibrate the research on the situation of our country. The INA-Casa plan (and Gescal, etc.) worked often with buildings not comparable to the highly intensive nature of the French plans ZUP and ZAC in the late Sixties, or of the English New Towns, but building large buildings often divided into double bodies, with stairwells to serve four flats, and low height. Public initiatives such as, for example, the district of La Martella by Quaroni in Matera and the Horizontal Unit by Libera in Roma or with a private nature (related to institutions of religious inspiration[9]) have shaped urban areas characterized by the presence of recurrent types in low density. Single or two-family houses with modest technical and formal characteristics, but not equally modest impact on the territory if, of course, for making a large amounts of residences to favor the low-density housing, the built is required to occupy an adequate portion of space.

Finally, if we exclude the large-scale projects located mainly in areas of late urbanization of the capital or in the suburbs of the north industrial cities (Milano along the Gallarate direction or the first Torino belt), there are interventions that are attributable to different Ater (or Aler) which lie at an intermediate scale between the villages and the Italian INA-Casa *grands ensembles* (Vigne Nuove, etc.), more recent interventions – Eighties – often made with tunnel technology and massive use of prefabrication.

One of the biggest problems is constituted precisely by those buildings or groups of great size buildings, which generally are degraded more for discrepancies of social conditions than for actual physical suffering. Socio-spatial segregation generated by income inequality, especially where ethnic minorities and disadvantaged groups seek asylum, could be mitigated by proposing mixité as an added value: offer of differentiated types and the enhancement of local facilities also meant as integration and social control tools. Addressing the “big dimension” as a sustainable project is one of the challenges inherent in this type of improvement operations. Operations that involve sensitive consequences in the redefinition of the city idea, propose an unprecedented re-reading of the binomial architectural typology/urban morphology. Operations also appear as careful sutures and

organic succession of interventions, instead of the cataclysmic formation of the “tabula rasa” from which (with less and less conviction) to start again.
This approach coexists with the need to formalize a method of guidelines that can become – in harmony with the regulations – operational tool available to professionals which daily work in the area, a tool supported in doing that (and preceded) by an accurate reflection, by a careful research, even in the academic environment. This in the belief that university should be at the service of social demand and educate the public to the inevitability of more appropriate and more productive choices.

It is essential to set the culture of living well outside the specialized scientific communities. Broadening the operational horizons to a multitude should in fact be one of the primary tasks of the university, not to enact paternalistic planning procedures from bottom-up, but to point other ways of urban development through concrete examples and to spread a message functional to the variation between the many research aberrations, of the housing issue, central from a social, economical, political point of view. The tools that the different institutions have (framework agreements, contract, etc.) already make possible to take the virtuous path of confrontation between research and governance of places, after which we shall not see an overlap of roles (the university intervenes with both feet in the professional world, claiming weights and skills difficult to find on the market) but a partnership that can generate a shared project of the territory.

It is within this frame that, as a partial operative pars construens of this short paper, we introduce the teaching and research experience focused on the redevelopment of the tall buildings called Tintoretto and Cimabue, of the San Polo district in Brescia, designed in the early Eighties by Leonardo Benevolo for which the Municipality in 2009 had proposed demolition: a unique solution not as conclusive for the physical degradation of the artifacts but for the serious social problems.

The aim of the thesis was to provide, through a sample project, the proposal for a series of actions to configure the possible intervention strategies for a potential recovery.
On one side were considered the opportunities to adaptation and/or improvement on the energy, typological, functional and aesthetic level, on the other the focus was on improving the quality of services and housing.

The proposal has hinged on a few key points:
• change the morphology without burdening the existing structure;
• improve the functional distribution to the needs of contemporary living in different households;
• ensure accessibility for all;
• improve the energy performance;
• create new opportunities for social gathering, so the building can hybridize residences and services, to transform the area into a lively place (not just a dormitory district) to be enjoyed 24/24 and 7/7.

The buildings in question do not show, however, serious shortcomings in terms of energy, especially when compared to other similar and coeval.
The proposed changes to the facades match the results of the study of climatic data and the exposure of artifacts. For the northwest facing wall it was found necessary to reduce energy losses by increasing the thickness of the insulation. The southeast facade, instead, decidedly favorable to accommodate passive solar systems capable of capturing heat and light, has been amended by the juxtaposition of a solar bio-climatic greenhouses system features totally independent from the existing structure. The operation of the greenhouses was calculated by evaluating the masses of accumulation, the types of obscuration and the glazing system.

In order to improve the comfort and ventilation of accommodation was made, where possible, the double exposure in a apartment with single overlooking. With the addition of two new elevator bodies, it was possible to eliminate the blind internal distribution corridor.
To encourage the social *mixité* some floors were devoted to particular social categories such as *city users*, students and

seniors. The intervention was limited to only change the non-structural elements allowing different scenarios of privatization of the property, to get fully convertible buildings also featuring temporary housing and offices.

The aim of this and other ongoing research is, after all, the definition of yet another right fit for a rebuilding of decent housing that is based on the recovery of what was and what good is found in buildings still usable, that is no longer time to dismiss. At a time when any product is irreparable, as the market desperately needs a spare part that passes for new business and maintenance and replacement of components not only more efficient, we have the consciousness that it causes a constant disposal costs and waste. Materials and social. Energy input not sustainable. We propose the rational maintenance of social housing, to the extent that the state of things has – for now – placed, working with modesty (a little "warrior") that, if supported by a spark of anarchy, is sometimes identified with the liberating rigor of the rule of art.

This experiment would lead to sensitize governments on the problems of urban and architectural reconfiguration of complex social housing in their territory, resorting to demolition as a last resource, learning to evaluate costs and benefits of urban maintenance, pioneering the use of materials and indigenous techniques, capable of rooting architectural contexts in which they arise.

Notes

[1] Castro R., Denissof S., *[Re]modeler, Métamorphoser*, Editions du Moniteur, Paris, 2005.

[2] Druot F., Lacaton A., Vassal J.P., Plus. *Les grands ensembles de logements,Territoire d'exception. Etude réalisée pour le Ministère de la Culture et de la Communication Direction de l'Architecture et du Patrimoine*, Paris, 2004.

[3] The Law (D.Lgs. 22/1997, D.Lgs. 152/2006: the so-called "Environmental Code") and the case-copy of the judgment in the case 16705/2011 of the Court of Criminal Appeal Section III. "Waste Management of post-earthquake in L'Aquila 2009") equate demolition waste – according to estimates, 40% of waste in our country – to special waste, which requires proper disposal procedures of considerable complexity and economic impact.

[4] Cfr. Malighetti L.E., *Recupero edilizio e sostenibilità*, Il Sole 24 Ore, Milano, 2004. AA.VV., *Ristrutturazione e trasformazione del costruito*, Il Sole 24 Ore, Milano, 2004. Carria F., *Il rinnovo delle facciate*, Flaccovio Editore, Palermo, 2009.

[5] This refers to the already mentioned book-manifesto F. Druot, A. Lacaton and J.P. Vassal, Plus, 2004.

[6] See D.L. 115/2008 (implementing Directive 2006/32/EC), Art. 11.

[7] One action-pilot Kroll from the late Seventies (Alençon, 1978) and to implement the partial recovery of buildings constructed only a decade before. See Lucan J., France - *Architecture 1965-1988*, Electa, Milan, 1989.

[8] For example the intervention of the study Forster & Schnorr in Leinefelde (Thuringia, 1998) for the recovery of residential blocks for a total of 120 flats.

[9] See the Village Violino in Brescia.

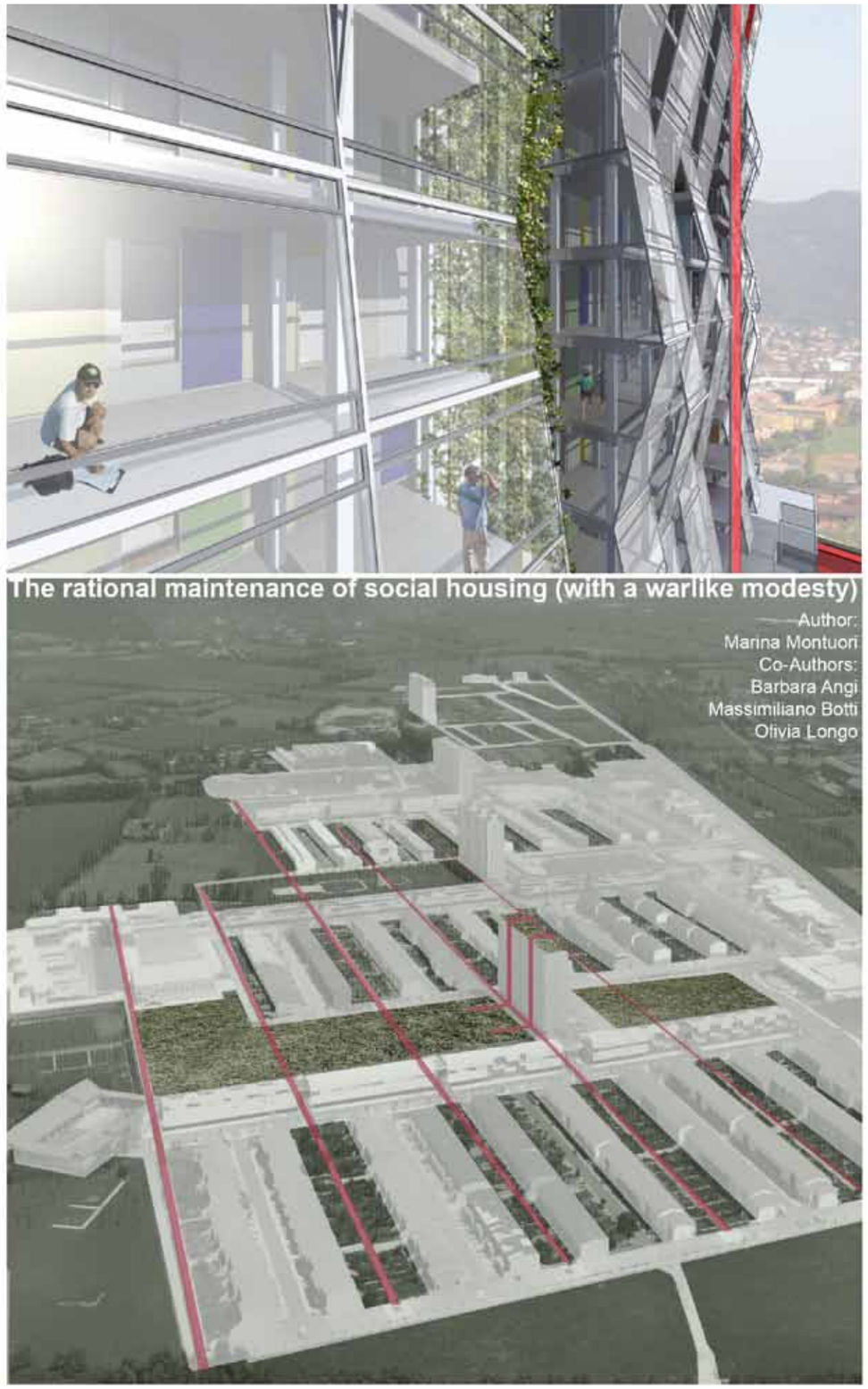
Title of image:

Building Cimabue (San Polo, Brescia). Overall view before and after intervention.

Legenda:

Diploma Thesis High Rise Housing in San Polo (Brescia): architectural reconfiguration and renovation vs. demolition.

Students: Ilaria Napoli, Alice Saleri
Supervisor: Marina Montuori
Tutors: Barbara Angi, Alberto Arenghi, Roberta Bianchi
Respondent: Pierre- Alain Croset



Raffaella Neri
Politecnico di Milano, Italy

The elemental unit of the city

My interest is related to the most common part of the city, which constitutes its body and its grid: not to the elements which represent the reason because a city is a city, monuments and public buildings, but to the parts devoted to the private life of the citizens, the residential neighbourhoods, the places the houses generate, the rules the settlements are based on.
I would like to begin remarking a fact. I consider that also the housing places are urban places: they include houses, open-air spaces, spaces for relationships, gardens and common places. They are all places for civic life which must not be separated or excluded from the city: the residential areas represent large parts of the city and they mostly define its shape.
In the european city, houses have been built in relationship with monuments: the identity of the parts of the city has always been defined by the presence of the public buildings, both civil and religious ones. Every part, having a proper definite extension and called “quartiere”, or “sestriere”, was traditionally identified by the name of the church the inhabitants referred to, by the main public building that was built in it (a castle, a theatre, a market) or by the presence of an evident natural fact (a hill, a harbour and so on).
The composition of different kinds of buildings genarates the public places of the city; they have a hierarchy and a clear order according to the meaning of the activity the buildings are devoted to.

Throughout history, the construction of residential areas was always based on recognizable principles, so that it is always possible to distinguish the ancient core from the later expansions in a city map. The different principles we can recognize correspond to the dwelling culture, following one upon the other during the history. It is rather easy to recognize on a map the latest expansions for the opposite reason: they lack every structure and every rules clearly interpreting an idea of dwelling, an aspiration towards a quality in housing that, as a matter of fact, does not still have any clear and fixed form.

I think that it is necessary to take this research again and to carry it on.

As to the problem of the residential urban settlements, it seems appropriate to overcome the culture of the “neighborhoods” - “quartieri” or “viertel”, as they were called – as it has been defined in the 20th century: in that idea they are formally independent units, isolated islands which refer to an idea of the city that can be built through the addition of different, complete and enclosed parts.

This topic of the paper concerns the necessity and the possibility of addressing the research towards the definition of elemental units which could assure an urban grid continuity, similarly to what happened in the cities of the past. It is evident that in the modern city the changing of conditions, dimensions and relations impose of course a deep rethinking of the principles that define these units.

In the european city the houses built the streets, the squares, lots of the urban public spaces. This closeness between privat houses and public spaces is, maybe, the fundamental quality of living in our old towns, and we can still recognize it in the historical centers. This is a vital and necessary relation, it means that the houses cannot be excluded from the life and that private and public buildings must always define their proper relationships.
It is clear that the problem of defining the elemental unit of the city involves deeper questions regarding the principles of city planning and the idea of city we aim at: first of all the relations between private and public places.

We must ask oureselves if the streets are still the main public places of the modern city. Do they have the same value they had in the old city? Are still they places for walking, trading and meeting, and still the houses represent the places where that spectacle of life could be seen from, as we were in a kind of urban theatre?
If not, if the streets have been changed both their role and their meaning, what are the public places of our cities the houses must relate with and face to? If also the squares have been changed their construction principle, what does substitues them in the contemporary city?
The 19th century city crisis has highlighted the need to replace the strong relation between the house and the street with something else that could assure vitality and quality to the house, to the city and to its constitutive parts.

In order to do that, it is of great help to recognize the elements which assure quality to the ancient city blocks and houses in order to define analogous principles for the construction of the contemporary city units. We need to define the public places the houses must face to, the places that the theatre of our life will assume.

In the ancient city the houses are grouped in urban blocks of different size and form. Every block constitutes the elemental urban unit; it is defined by the streets which surround it; its form and its measure vary depending on the city. The urban block usually faces both the public streets and a more intimate, private and quiet inner core. But there are also larger and more complex blocks, with a great richness of activities and places inside them: here you can find other public or semi-public spaces, buildings, narrow alleys connecting urban streets, little churches or chapels, workplaces, and so on.

In the city of Pavia, for example, an ancient roman city, the blocks are square in shape and they measure about 80 for 80 mt.; almost everyone has a properly own core containing different public spaces and activities, little square, many little churches, passing lanes. In addiction, in the same block you can often find different architectural types, palaces with the tower, row-houses, court-houses, etc.: a richness of types and activities which corresponds to the variety of architectures and paces, to the richness of life.

There are many other examples where the fruitful relations between the private and the public urban spaces develops both along the streets and in the inner courtyards: in Milan, casere and sciostre contain courtyards that multiply and open themselves to the city, working places, urban passages connecting street and canal: an inner city on a smaller scale. The houses live in relation to more than one public place: they organize a hierarchy of urban spaces, from the most public to the most private one.
This idea of mixing activities comes far away: our actual problem is to define the new form of this relations.

We can say that the quality of a house depends on the quality of the place the house defines, the place the house looks at, the richness of relations it is able to establish. In other words we could say that the quality of a private house largely depends, and it seems to be a paradox, on the quality of the urban public space the house is related with.

If we do not recognize streets as the main public place of the contemporary city, which other elements the house can establish its own relationship with to achieve the quality we recognize in the ancient city?
This means the rethinking of the principles of housing planning, the relationship between house and green areas, the units dimension, density and composition, their aggregation principles, building typologies, construction ways, etc.

The problem I want to face is the definition of a new elemental unit, also considering the changing in scale of the modern city.
The aim of the research is to establish generale rules that will be adapted to the specific sites where they will be applied.
Searching for these new principles, in summary we could say that the new units might have some characteristics:
- The urban quality of the parts of the city depends on the existence of public buildings and public places devoted to the collective life of the citizens: with them a group of people become a community and a little settlement can be considered a town. The architecture has the duty to represent in the space’s forms the value and the meaning of these institutions that join people. Every part of the city might have collective urban places that identify it which might be organized according to a hierarchy of importance.
- Public and private places might be closely linked in order not to separate them and not to create part of the city solely devoted to housing, and other parts which are rich in public facilities and institutions; in order not to create an opposition between a public city and a private one; in order not to reproduce the inequality between the center and the periphery.
- Every part of the city might assure the simultaneous presence of different activities, both private and public ones, to guarantee a richness of places the houses can relate with; every unit might be composed through a variety of types that could correspond to a variety of activities.
- Nature and green areas have an important role to define the charachteristic of public places.
The theme of the relation with nature has been claimed for a long time and was the goal of the past century architectural culture researches. Nevertheless, it hasn’t still succeeded into the definition of a firm principle in the city parts construction, nor into an aggregation principle of these parts, or in rethinking the residential typologies, referred to the new kind of places this relation could define.

Projects

The research we are carryng out means to go deep into this problem and to study the question trhough some architectural designs. We worked on some projects that have been applied to different contexts: I’m going now to illustrate and to discuss some of them, addressing to the questions above.

Scalo Farini, Milano

The first project regards the transformation of the site of the old Scalo Farini in Milan.
This is a very large area, close to the center of the city and to the most important regional train station, representing an important connection between the city and its territory. The area was the main railway yard of Milan, with the duty inside; some times ago it felt in disuse, so that it is empty and available: only some railways lines will maintain their seat there. For these reasons the area offers an useful occasion to redesign this part of the city in order to redefine its role and its identity.

The railway lines divided different parts of the city that grew up separatly from each other: south of the railway there is the old town with its walls and gates, and with a historical cemetery; it mainly developed itself following the direction of Corso Sempione, stopping the city blocks against the lines. Towards east a neighborhood called “Isola” grew up along the ancient street to Como; north large factories settled becoming one of the industrial and peripherical suburbs of the city.

The municipality means to establish a new urban settlement of high-density; it must include mixed activities, residential, commercial, cultural, tertiary and craft activities, together with a large part of public green areas, parks and gardens.

Our project agree with the idea that this large part of the city is composed by nucleus with different forms and identity; north units will be still distinct from south ones, but they will be connect by a new bridge. Some of these parts strongly lack in services, facilities and public places.
A new urban highway will run parallel to the railroad and a new subway will serve the area. In this way the site will be better connected with the center of the city and, above all, with the more wide territorial city, becoming part of the urban relations at a regional scale.

The new settlement must define its own planning principles, according to the grid and the blocks with no order coming from north.
First of all we thought that a new part of the city might have services and places of urban interest, that could be able to build a new public civic center for all citizens: it might be recognizable through its architecture, according with its value and its meaning. Otherwise this part would become another periphery, as well as the close northern neighborhoods, lacking in public urban places, institutions, architectural quality and identity. The presence of urban public places and architectures is the only way the settlement has to become a part of the city, attributing the area an urban quality.
We grouped some public activities and we decided to displace a square with three high towers and a civic museum at the top of the area, in the most visible place, looking far away towards both the center and the landscape. The most important axis structuring the site runs in parallel to the railway, pointing at the two twin towers which are open to a park behind them; this axis represents the backbone of the system and is the main road distributing the other streets of the settlement. Pedestrian paths and bike lanes run across the green. The raods are hierarchically organized and the inner ones are devoted to the slow mobility of the settlement. The grid of the streets design the elemental units, or block, green “stanzas” which will become the place of the houses and the public-services.
In such a way the green areas will constitute the public places of the settlments. They are different in position, dimension and shape, distinguishing their proper quality and character: a large public park with sporting facilities is located beyond the railroad; a garden in connection with it occupies one of the “block” of the settlement, close to the main square; other regular meadows are the places the houses and their local services will face in.

In this project every unit is composed by open green places, square in shape, measuring about 100 meters from the side: two residential buildings 14 floors high border only two sides of it, so that they define an open, large and green court. Inside every court there are public services and facilities, commercial and leisure buildings: they split up the green area in more parts having different qualities, preserving its visual unity.

The inner space of the open courtyards are always public spaces; the presence of the public buildings, that are different from court to court according to their position, makes this places rich in life and activities, and furthermore helps to distinguish each other and to precise their own identity.
The disposition and the composition of the different units emphazise the idea of the project: the quality of the house is its facing the green, that is a public space of the city, and, throughout it, the other urban places, the green axis, the rows of trees, the gardens, the pool, the other open courtyards, the twin towers that orientate the eyes: the other places of the city. The disposition of houses is aimed to alternate the succession of the open courts, so that in perspective man can see a sequence of large and narrow spaces.

The typologies of the houses are defined according to this choise: they are organized so as to distinguish two parts, a more open one and a closer one, with the collective rooms of the home - the living-rooms and the lodges - facing to the field, and the private ones - the sleeping rooms - facing to the streets.
This project provides just one housing type, a tall and long house that repeats itself defining the inner place of the open public court.
I would like to point out again the importance of the public services presence: they articolate the unity of the court in more and different places, and, together with the green and with the court openess, they are an important reason because the collective place could became a public one.

Tianjin, China

In the project for the chinese city of Tianjin, in the district of Ling Gang, Binhai, the requested density of the settlement was quiet different. It was supposed a very extended expansion in an undeveloped location facing a little lake where it would contemplate low density. Nevertheless it was required urban quality for this new settlement, green areas and mixed activities.
The plan is made thinking to the necessity to define a hierarchy of places. Here the public places are still green places with different dimensions and characters.

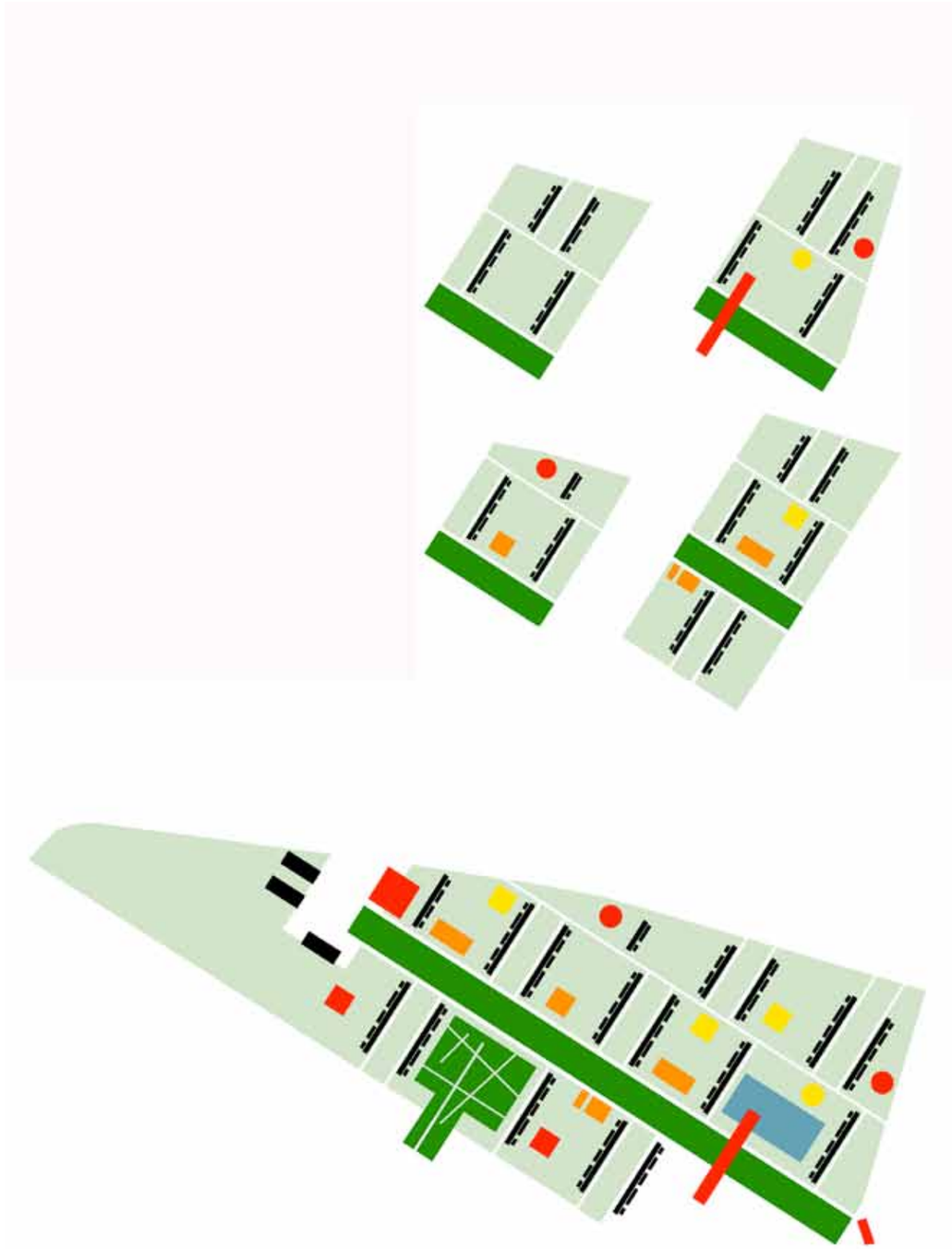
A large park is the center of the settlement: it is a public space that contains the most important activities for the territorial city, theatres, museums, libraries, sporting facilities, and so on. In the park there are also high towers where commercial activities, temporary residences, hotels and offices can take place; the towers can be seen from great distances and build the landscape of the center of this new city. Every one of them takes a position corresponding to a single residential unit. In turn these units

have a garden in their center: this is the place where some local scale facilities and services are built, such as schools or commercial buildings, and where the housing units face to.
Each field, or block, is identified by the local roads: here the housing buildings are disposed perpendicularly to the central garden.

The houses are organized in 4 floor parallel buildings having different lenghts; they have been placed at various distance and can be composed in two different ways forming open courtyards with different width and complexity.

In every block there are four buildings that are connected by another one: it divides the ground in two parts communicating with each other and forming courts of different size. This building also contains public activities (kindergartens, offices, medical centers, etc) and is constructed with arcade and galleries.

Every residential “block” is composed by both housing and public buildings. Inside this smaller gardens that are still public spaces, you can find public buildings devoted to the inhabitants.



Saithiwa Ramasoot
University Bangkok, Thailand

The Sufficient House: Housing Design for Suburban Bangkok Based on Sufficiency Economy Philosophy

1. Introduction: Sufficiency Economy Philosophy

The growth-oriented developments in Thailand towards modernity as a result of economic expansion, political power and introduction of technology were characterized by accelerating changes in the society over the past decades (Mulder, 1996). The changes have increasingly shown mixed results on the environment, people and economic systems, and especially impacts on social relationships and cultural perception, which consequently define the country's future directions. Sufficiency Economy Philosophy (SE) has emerged to the public awareness just after the 1997 economic crisis as holistic measures to recover, reconsider directions and proceed on a balanced approach to future development , despite H.M. King Bhumibol Adulyadej's long practice and gradual cultivation of SE to his subjects on many occasions as early as 1974. The philosophy does not focus only on economics but its universal and scalable domain also embraces conducts in all aspects at all levels. Aiming to achieve balance and sustainability, SE is pursued by means of three principal components: moderation, reasonableness and requirement for a self-immunity system against impacts from changes and challenges, together with two underlying conditions, knowledge and morality. (Fig. 1)

The potential to adopt SE in the built environment discipline has led to the goal of this study to investigate its application as an alternative approach to a healthy development. This paper reviews the concept's establishment in Thai architectural practice and addresses its practical implementations in terms of housing and community design in particular. At the end of the paper, a design guideline to develop a sufficient house is demonstrated as a mechanism to validate applications and decipher the philosophical concept into viable instructions for practitioners and the public.

2. Sufficiency Economy in Design and Built Environment

Early studies and applications of Sufficiency Economy Philosophy were essentially limited within the realms of economics and agriculture, thanks to its linkage to the King's New Theory Agriculture. However, later investigations cover a much wider, if not all, range of disciplines, including design and built environment. Such diverse studies have been stimulated by governmental organizations as the philosophy has been listed not only in the National Economic and Social Development Plans but also in the National Research Policy and Strategies as a prioritized research subject to receive grants. On one hand, overused references and superficial applications without profound understandings sometimes make it a trend that forms a "Sufficiency Economy Crisis" especially when mistreated as an "excuse" or "tool" for self benefit to boost up one's positive image (Onwimon, 2007). On the other hand, the expansive studies have reflected the underlying idea of its applicability and scalability in all levels, be it the grassroots or the administrative sectors of the society.

Due to the principle of SE that is open for interpretation and infinite patterns of applications, its diverse implementations in design practice still share certain similarities in pointing out different approaches from the usual capitalism. That is, in contrast with capitalism's goal for highest profit and productivity, SE aims for happiness and community building via social cohesion, slow and gradual process plus strong enrichment of cultural identity and local or appropriated technology. Intentionally or not, an integration of such principles and negotiation with profit-oriented efficiency can be seen in business goals, vision and management strategies of design-related professional practices, including small enterprise, design firm and education (Waeochan, 2007). Among ideas drawn from case studies are close participation of local community, use of local and waste materials, identity building based on traditional lifestyles and resources, environmental impact control, and respect for existing contexts. When it comes to built environment, SE is presented as an alternative approach to the sustainable development paradigm. The two concepts share ultimate goals to negotiate and cope with the extreme approach of mainstream developments initiated in western countries. Fast-growing Asian cities like Bangkok have suffered ambiguity and bipolarity in transformation towards modernity which may end up with distorted cultural identities unless appropriate measures are introduced to balance the change (Askew, 2002; Lim, 1998). The definition of sustainability appears to embrace a more extensive scope than sufficiency, which is a mechanism that will eventually lead to the state of sustainability one way or another. In other words, sufficiency is another form of sustainability that is particularly configured to conform to the Thai contexts and local conditions. The Urban Sufficiency concept can be developed to seek out for a sufficient way of urban community design and achieve all five dimensions of sufficiency in spiritual, social, resources and environment, technology and economic aspects (Noyraiphoom, 2009).

The so-called Self-sufficiency concept encourages urban centers or cities to be committed to operate with least possible dependence on outside resources, like in Hong Kong and Singapore (Lim, 1998). In contrast, a sufficiency society does not simply replace dependence with "self"-reliance, but makes use of both independent and inter-dependent statuses via gathering in group and networking (Thaipat Institute, 2006) for beneficial results and as a risk management strategy. To adopt SE strategies in design and management of urban community, applications are implemented in levels through the hierarchical system of basic communities i.e. individual, household or neighborhood, which is least complicated but most efficient to administer, fulfill basic needs and develop well-being of community members. Then, these healthy communities are grouped together as a larger society to cooperate, exchange and support one another in more complex roles and activities. Such framework creates an integrated development which empowers a community through its most significant assets: people, knowledge and resources, while preparing it to handle changes and challenges.

3. Approaches in Architectural Design

Linkage of Sufficiency Economy Philosophy in theoretical and practical application in architectural design has been increasingly explored by scholars and practitioners especially when the policy to encourage its implementations has been highlighted as a national agenda. A variety of research studies have been executed in inductive approaches to investigate a correlation of existing architectural and environmental development projects to the conceptual framework and in deductive approach to investigate methodological interpretation of SE towards architectural concepts and applications. While several works offers integrated design explorations of SE, while others address it in a particular aspect, frequently the low-cost design and energy conservation. A number of royally-initiated development projects reflect the SE philosophy by means of project objectives, methods, techniques and implementations. Reciprocal underlying concepts among the projects and their interrelation can be seen through royal statements and guidance given during the project development which point out philosophical and methodological fundamentals towards the same direction in parallel with the SE. The six most frequently implemented underlying concepts can be integrated as an overall approach for urban, community and architectural development: "In royally-initiated development projects, proper planning and management are required to ensure that the undertakings are economical, development impacts are mitigated, and multiple objectives are served. This allows the projects to maximize social and public benefits and ensure sustainable development, which demonstrates the holistic value of the projects." (Faculty of Architecture and Planning, Thammasat University, 2008) Other significant underlying concepts principally involved architectural development projects on royal and religious buildings include the expressions of cultural identity/conservation, national image, functional requirements, and use of appropriate architectural characteristics. Rama IX Golden Jubilee Temple Project demonstrates a royally-initiated architecture in which sufficiency is expressed through the design of small-scale, cost-effective, fast-constructed, minimally-decorated building that can still fully exhibit Thai identity and architectural tradition with a role of a temple as a spiritual and social center for surrounded communities (ASA, 2008b).

The Sufficiency Architecture movement has been most widely underlined via the "Architecture Based on H.M. the King's Sufficiency Economy" project starting in 2008 by the Association of Siamese Architects under the Royal Patronage (ASA) which aims to promote SE's integration in Thai architectural practice in every level. The project has been carried out through a series of sub-projects not only to draw mass attention to the grand project but also to gather ideas and interpretations on the concept, including open competitions, exhibitions and exclusive discourses with distinguished architectural practitioners, scholars and significant figures from other fields to exchange viewpoints and experiences on the so-called sufficiency architecture. The extensive perspectives on sufficiency architecture point out a variety of essential issues that embrace all aspects that would contribute to create one, from intangible to tangible, from spiritual to physical, from traditional to technological, from local to universal, from social to scientific, and from fundamental to advanced. Example of keywords are simplicity, local wisdom, spirit, safety, sustainability, balance, function, worthiness, multipurpose, natural light, energy saving, efficiency, necessity, localization, social aspects, economy, local materials, appropriated technology, orientation, aesthetics, place-time and wellbeing, to name a few. The collective keywords were integrated with the three-component-two-condition methodological framework of the philosophy and graphically presented in the tree-shaped Conceptual Framework of Sufficiency Architecture as shown in Figure 2. The conceptual framework implies that sufficiency architecture is not carried out through its physical qualities alone, but rather integration of appropriate characteristics of physical environment and the sufficient way of life, domestic and social activities and wellbeing of its users and community in order to achieve the holistic quality of life. That is, in addition to collaborations between users and buildings, the creation of sufficiency architecture involves an integral process of program development, project preparation, efficient design and construction, and utilization and post-occupancy maintenance. This framework diagram provided a basis for ASA's subsequent subproject that called for voluntary contributions of individual design interpretations of a sufficient house from Thai architectural organizations (ASA, 2008a). Top underlying concepts employed in the submissions encompass function, comfort, responsiveness to user lifestyles, user behaviors, cost-effectiveness, simplicity, use of materials and technology, basic needs, worthiness and reasonableness, respectively. Other mentioned concepts include integration, energy consumption, climate, aesthetics, harmony, environmental impact, self-reliance and community ecology. While theoretical review of sufficiency architecture concept has led to questions about its practicality and actual applications in building design, ideas and design processes indicated in sufficient house submissions reveal a considerable resemblance with fundamental concepts in common house designs, which points out the natural, effortless, practical applications of the philosophy.

4. Housing and Community Design

Approaches to sustainable development are frequently linked with ecological footprints as a standard tool to define environmental sustainability which many believe to be the most fundamental, non-negotiable factor of what is sustainable; however, social and economic issues also matter to ensure a holistic result but require appropriate tools and indicators to handle the multi-faceted development (Desai, 2010). Regardless of different concentration, the three factors appear interconnected and consequential. In terms of community development, design of built environment eventually contributes to non-environmental issues like physical and mental health, well-being, living expense, transportation, employment, affordability, accessibility, facilities, education, security, local identity, human rights, social interaction, participation and responsibility one way or another. Application of SE in a healthy community building involves environmental and non-environmental management. While natural environment provides resources for consumption and production, built environment creates a setting or condition that encourages a formation of a healthy, sufficient and sustainable way of life of an individual, his/her household and community at large respectively. Case studies of SE-based healthy communities prove that sufficiency must be achieved step-by-step at the smallest unit before building up through community collaborations from with-in, not from outside pressure, and can be different for each community depending on their conditions (Sathirathai and Piboolsravut, 2004).

Housing and community design was particularly focused in this study for an in-depth investigation to seek for practical design principles to create sufficiency architecture through the development of a design guideline due to its roles to serve for the most fundamental human needs. Middle-income families in suburban areas of Bangkok and surrounded provinces were the main target group owing to their significant number of population, impact on the society at large as well as high potential to acknowledge and adopt the SE in their household in terms of both lifestyles and residence. Representing an interpretation of philosophical principles into physical qualities, the guideline aims to attract and encourage architects, engineers and related design professionals, as well as prospective house owners to adopt the sufficient house design approach and live a sufficient life for the eventual sustainable path.

In line with the open and adaptable concept of the philosophy, the design guideline is developed in the form of a relatively broad checklist or a manual that assembles issues associated with a sufficient house and a sufficient community for user's consideration and implementation as appropriate. Decision and level of engagement in each recommendation are considered subjective depending on individual interpretations and influential contexts, for example family condition, culture, lifestyles, behaviors, budget, site settings, constraints and simply preference. Such flexibility also leaves room for representation of identity of its users and encourages creativity via boundless architectural variation. The listed issues are categorized into mandatory "must" and recommended "should" subjects in order to differentiate levels of obligation and flexibility to adopt. The former group consists of all compulsory issues in building design that require strong attention, i.e. building codes and related regulations, human dimensions and basic requirements responsive to human's physiological and safety needs. On the contrary, issues in the latter group are less strict as they embrace advanced matters promote emotional, spiritual, social and philosophical fulfillment. Unlike green building design principles in which achievement of practice can be quantitatively rated based on checklists, the level of sufficiency in design is hardly evaluated or comparable since the appropriateness of the quality is rather founded on a case by case basis.

5. Design Guidelines for a Sufficient House Design

The Guidelines for Residential Design Based on the Philosophy of Sufficiency Economy is strongly established on the meaning of the term "sufficient" -- meeting needs, not too much, not too few, depending on the contextual situation -- and the philosophy's three pillars i.e. reasonableness, moderation and self-immunity for protection from changes, and two conditions, i.e. morality and knowledge. It consists of obligatory rules and optional considerations in six categories that span over the pre-design process and continue through design process and post-occupancy period. The detailed list can be summarized as follows:

(1) *Considerations for Budget Planning and Site Selection*
This pre-design process involves careful budget planning consistent with economic conditions and social status of the household, reasonable programming with moderate house size that fits the number of residents and requirements, and avoidance of excessive components that would unnecessarily increase building cost. This step also includes appropriate site selection by considering social and environmental contexts in both community and city levels. House location in a developed neighborhood with ample green space, close to workplace and schools, readily equipped with utilities and easily accessible by public transportations is encouraged.

(2) *Considerations for Building Configuration and Planning*
The design must fully serve basic domestic functions and other social and private activities according to family members' behaviors, interests and conditions. Flexible but compact planning for future changes should be considered to allow easy expansion or modification. House planning should encourage social interactions while retaining privacy. Universal design should be

adopted for family with members with special needs. Building orientation responsive to natural ventilation and light, large open space, use of landscape to create a green environment and space preparation for urban farming are recommended.

(3) *Considerations for Building Appearance*
The keys to sufficient building appearance are to avoid excessive decorations but develop aesthetics from rationality, simplicity and contextuality of building design. Use building components for efficient sustainable results, e.g. building mass and proportion, void size and positions, roof form and surface. Architectural styles and characteristics should respect environmental and cultural context of the neighborhood to retain local identity and unity, especially for buildings in context with special historical or architectural value.

(4) *Considerations for Material and Construction Selection*
Selection of building materials must fulfill legal standard and pay high attention to durability, safety and quality according to their particular use, such as capacity, water resistance and heat protection. Low-maintenance, cost-effective, easily constructed and environmentally-friendly materials based on high Thai content and low environmental burden are preferred. Additionally, designs responsive to modularity to reduce construction waste are recommended, so is the utilization of reused and recycled materials.

(5) *Considerations for Building System and Details for Environmental Sustainability*
Energy consumption control, minimal environmental impact and holistic sustainability should be encouraged through considerate choices of building systems and equipments used in the project and regular maintenance. Water and waste management as well as alternative or renewable energy are recommended. Sustainability should also be promoted through user awareness and appropriate behaviors.

(6) *Considerations for Community Design*
Contributions in private and public duties from members are required in creating a sufficient community. Social relationship, interactions and collaborations among residents should be supported through shared facilities and resources to reduce cost and consumption. Public spaces and facilities, such as nursery, community center, playground, pool, community garden and minimart, should be responsive to community needs and easily accessed by all. Social sustainability of the community should also be encouraged via participatory activities and community management system, such as communal rules and roles. Individual houses should be designed accordingly for optimal results of privacy, security, and visual and spatial connection, such as design of house form and position to link green areas. While construction of private properties should be subject to community approval and done with least impact to others, exterior design of new buildings and modifications of old buildings must be sympathetic with existing contexts to retain overall physical unity. Community planning should also promote security and green environment. Carpool, bicycle lane, low fence and community plan for emergency mitigation are among doable community measures.

6. Conclusion

A sufficient house is developed through an essentially normal process, but is established on a strong integration of reasonableness, moderation and self-immunity which articulates the core of Sufficiency Economy Philosophy in every aspect and detail, be it tangible or intangible issues. In short, a sufficient house is responsive to the nature of its residents and contexts, supports interactions among family and community members, adaptable to changes and transformations, environmentally-friendly, rational, cost-effective and ultimately contributing to the sustainability of the Thai culture. The Guidelines for Residential Design Based on the Philosophy of Sufficiency Economy that enlists all issues contributing to a sufficient way of life in a sufficient house within a sufficient community affirms the practicality of the philosophical concept and demonstrates its potential for countless interpretations and applications while allowing creativity in design. Via its balanced principles, Sufficiency Architecture reveals itself as an inspiring alternative approach for environmental development to go through the World's rapid physical and social transformations with sustainability.

Acknowledgment

This research titled "An Implementation Approach for Sufficiency Economy in Middle-Income Residential Design in Greater Bangkok" under the research plan "Application of Sufficiency Economy in Material Selection and Residential Design" was funded by the Office of National Research Council of Thailand. My gratitude also goes to co-researchers, Asst. Prof. Dr. Wandee Pinijvarasin and Spavit Darnthamrongkul.

Selected Bibliography

Askew, M., *Bangkok: Place, Practice and Representation*, Routledge, London, 2002.

The Association of Siamese Architects under Royal Patronage, *Following in the Royal Footsteps towards Sufficiency Architecture: Progress Report of Architecture Based on H.M. The King's Sufficiency Economy Project*, Plus Press, Co., Ltd., Bangkok, 2008.

The Association of Siamese Architects under Royal Patronage, *Royal Talents of Sufficiency via Architecture*, «ASA», 04:51-05:51, pp. 118-119, 2008.

Desai, P., *One Planet Communities: A Real-life Guide to Sustainable Living*, John Wiley & Sons, West Sussex, 2010.

Faculty of Architecture, Thammasat University, His Majesty the King's Roles and Concepts in Royally-Initiated Urban, Community and Architecture Development, G.B.P Center, Bangkok, 2008.

Lim W. S. W., *Asian New Urbanism*, Select Books Pte. Ltd., Singapore, 1998.

Office of the Royal Development Projects Board, Sufficiency Economy: Philosophy as Life Guidance, Bangkok, 2007.

Onwimon S., '*Sufficiency Economy' Crisis, Philosophy, not Theory, interviewed by Sorawit Chumsri*, in «Matichon», 26 February 2007, v. 30, n. 10579, p. 11, 2007.

Mulder, N., *Inside Thai Society: Interpretations of Everyday Life*, The Pepin Press, Amsterdam, 1996.

Noyraiphoom J., *The Urban Sufficiency Concept: A Sustainable Urban Design in Thai Pattern*, «Na Jua», n.23, pp. 177-198, 2009.

Pinijvarasin, W., Ramasoot, S. *Requirements of Middle Income Families in the Greater Bangkok Area for Single House Characteristics*, «Na Jua», n.25, pp. 365-387, 2011.

Sathirathai, S., Piboolsravut, P. "Sufficiency Economy and a Healthy Environment," *3rd IUCN World Conservation Congress, Bangkok, Thailand, 17-25 November 2004, Sufficiency Economy*, http://www.sufficiencyeconomy.org/old/en/files/17.pdf, accessed on March 9, 2012.

Sufficiency Economy Unit, Office of National Economic and Social Development Board, T*he Philosophy of Sufficiency Economy*, http://www.eto.ku.ac.th/s-e/SEgroup2/Lacture/Philosophy_of_se.pdf, accessed on March 9, 2012.

Thaipat Institute, "Levels of Sufficiency Economy," *Sufficiency Economy*, http://sufficiencyeconomy.blogspot.com/2006/02/3.html, accessed on March 9, 2012.

Waeochan N., *Sufficiency Economy: The Alternative Philosophy for Design Professional Practices*, in «International Symposium on Architecture and Culture in Suvarnabhumi (ISACS) », v. 2, pp. 42-51, 2007.

Wethyavivorn P. and others, *Application of Sufficiency Economy in Material Selection and Residential Design*, Research Report, Office of National Research Council of Thailand, 2011.

Images

Figure 1: Philosophical Framework of Sufficiency Economy
Figure 2: Conceptual Framework of Sufficiency Architecture (Source: adjusted from the Association of Siamese Architects under the Royal Patronage, 2008a)

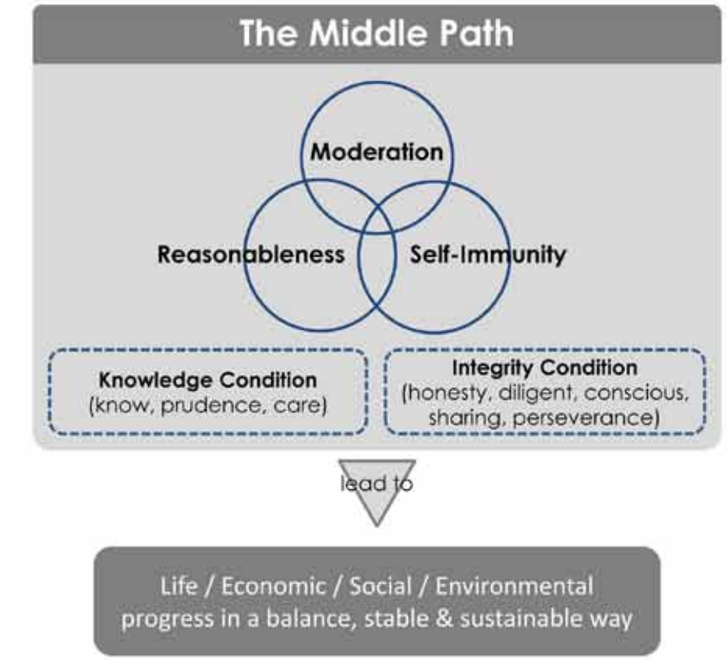


Figure 1: Philosophy of Sufficiency Economy

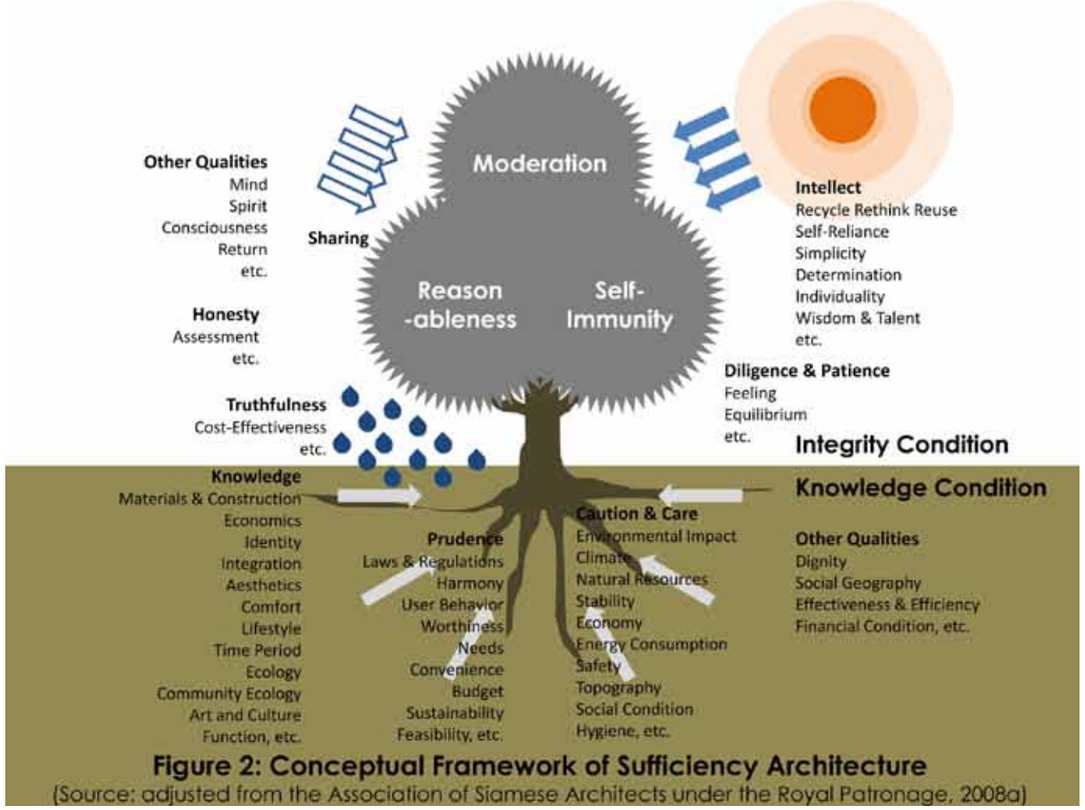


Figure 2: Conceptual Framework of Sufficiency Architecture
(Source: adjusted from the Association of Siamese Architects under the Royal Patronage, 2008a)

Marc Roehrle
University of Wisconsin-Milwaukee, U. S.

Authentic Communal Housing in America

The diminishment of the public realm in American cities that occurred as a result of the boom of rapid development during the post World War II years has not been inconsequential. Not only was the physical landscape drastically altered, but the social and cultural one too had been transformed. Historians have argued that a shift of social engagement from the public realm to a private one first began occurring during the late 19th Century. A change of attitude that valued the individual, privacy and domesticity eventually "sealed off the family…[from] the surrounding world… People began spending greater proportions of their time at home."[1] This trend of cultural isolationism, however, was greatly accelerated in the 1950's largely because of the proliferation of the new suburban neighborhood planning models. These burgeoning housing developments composed of low-density, single-family houses on individual lots re-emphasized the role (both as a symbol and as an artifact) of the home in the daily lives of Americans. Coupled with changes in how families entertained themselves – mainly the advent of television culture; and modes of transportation - specifically the role of and the increased dependency of the automobile (automobility), the significance of the role of the public realm has steadily been diminishing.

This is not to say that the public realm has been entirely eliminated, but rather, for the most part it has been substantially altered – it has become privatized. This fact should not go unnoticed. The co-opting of these spaces ensured that they were more easily controlled and restricted: depriving certain classes of people from enjoying them. Cultural anthropologists and authors such as Richard Sennett, Evan McKenzie, Robert A. Beauregard and Kenneth T. Jackson have demonstrated the decline and privatization of the public realm in America. In his book Crabgrass Frontiers, Jackson chronicles the morphological, economical and cultural transformations that urban centers experienced in the 20th Century – including the shift in population from city centers to the peripheries. Jackson offers that this migration was predicated by a generally negative perception of the city. The core was unfairly synonymous with poverty, crime and decay, while the edges (the suburbs) were bucolic and ideal for those who could obtain them. This riff between the city and its suburban communities not only redistributed the wealth from the former to the latter, but also deemphasized the cultural prestige of cities. That is to say, an entire class of people became disenfranchised and culturally isolated. "Citizen identification with the city is now less than it was a century or more ago. To be sure, nineteenth-century communities were bothered by crime, class rigidity, social unrest, racial prejudice, epidemics…[but] they possessed a significant sense of local pride and spirit as a result of their [collective] struggles [against] other cities for canals, railroads, factories and state institutions."[2] This marginalization led to a general demise of community and collective identity in American cities which in turn shifted the need for and responsibility of the city to provide social gathering spaces to private avenues.

One cannot underestimate the transformation in cultural attitude from "Main Street" to strip mall as a contributing factor that diminished the public realm in the daily lives of Americans. The 19th century urban street was radically transformed from a bustling active space into an isolated no-man's-land due to the change in lifestyles of post World War II America. Social interaction was stripped from the daily routine of most Americans due to the isolation that automobile culture fostered. Coupled with an expanding housing stock of solitary, detached dwellings, many opportunities for social engagement were eliminated. The family became isolated and disengaged while most opportunities for social activity occurring in privatized arenas. (see image 1)

Unlike the social housing traditions found in Europe, typical late 20th century American housing[3] lacks an authentic social component. One housing type in America, however, that is complex in these terms is the residence hall found on university and college campuses across the country. Leon Battista Alberti stated that *the house is like a small city and that the city is like a big house*. To that I would like to offer that the university campus is a city within a city. Universities and colleges exhibit similar physical and cultural complexities as cities. To borrow from Stan Allen, both have their own *territories, systems and objects*. They have their own outdoor spaces (public and private) including infrastructural networks, their own buildings, and their own citizenry, each with unique patterns of daily rituals. It is the intent of this paper to demonstrate that genuine social spaces in America (and more specifically the inclusion of student housing in campus planning) exist most authentically in its colleges and universities where a complex network of private and public spaces allow diverse constituent groups, students and non-students alike, to have access to open civic spaces.

One of the greatest contributions to the American campus planning tradition is the inclusion of civic, public spaces that operate at various scales. At the macro scale, the public realm is best defined by the placement of buildings in relationship with one another such that they establish outdoor rooms[4]. At the scale of the building, the connectivity to these outdoor spaces and the integration of public spaces to circulation networks complements these larger scale-planning strategies. Lastly, at the micro scale, the consideration of the individual, how they inhabit their own personal spaces and how they maneuver through and between the larger civic spaces on campus determines the success of the integration of a civic realm throughout a campus. This careful consideration of civic space is paramount. College campuses need to be inherently open; a transparent and civic stage predicates the free exchange of ideas.

Campus planning strategies are inseparable from the mission of the college. As demonstrated by numerous examples, the ideals of the institute founders became manifest in the planning of their institution. At Union College, founded in 1813 Schenectady NY[5], founder Eliphalet Nott believed that "a community of scholars, 'separate from the great world' and yet contemplating the grandeur of the 'new Zion', was embodied in his spacious architectural ensemble on the hilltop facing the American West."[6]

There are several physical characteristic that distinguished American colleges from their European counterparts. Early European colleges were generally conceived as a single building with wings that formed an enclosed courtyard. The European courtyard was inwardly focused and cloistered (arguably physically, intellectually and culturally). American colleges, on the other hand, where typically organized around a group of buildings that created a three-sided open courtyard[7] that turned to the world around them. The American model of a three-sided courtyard has several advantages. It offers openness (both symbolic and physical), directionality, vistas with focal points and hierarchical organization. These open courtyard spaces allowed students and citizens to gather in democratic public spaces. As Lewis Mumford correctly points out, "works of architecture form a bridge between private and public, the individual and society."[8]

In 1795 in Chapel Hill North Carolina, America's first public college[9] was conceived utilizing this open courtyard strategy. It was never completely constructed as envisioned, but it began a new tradition of campus planning. Early plans clearly demonstrate a grouping of buildings organized around an open ended "grand avenue." Undoubtedly, the influence of L'Enfant's commission to design the new nation's capitol city (including the one mile long, 400 feet wide garden avenue – "The Mall") played a role in the development of the "cour de honneur" within the American college campus planning tradition[10]. The first actual execution of this planning type occurred in the design of South Carolina College (now the University of South Carolina). In 1805 a "horseshoe" plan with parallel structures flanking the long axis of open space with the president's house situated on one side and the other open to the town was conceived and constructed. This spatial organization activated the town as a participant within this public realm.
It physically and culturally connected the town with the college. Furthermore, establishing this relationship with its context positioned the college as an active participant in the social discourse of the city.

While some colleges were sequestered (for ideological reasons) many remained connected (both physically and culturally) to the city. Even Thomas Jefferson, in choosing where to locate his university, sited Central College in Charlottesville, Virginia, a city of 18,000 inhabitants[11]. Its central location in the state symbolized its role in educated its citizens.
The University of Virginia, established in 1819 and opened for classes in 1825, is the manifestation of Jefferson's ideals regarding education: an institution that was broad, liberal and modern and more importantly not fettered by religious doctrine or zeal. Jefferson continued the American college tradition of housing its students on its campus. Two rows of student residences, interspersed with "pavilions" that housed professors and classrooms flanked an open courtyard – the "Lawn". One end of this public space is open to the mountains to the south while the north is punctuated by the heart and symbol of the university, a library – the "Rotunda". (see image 2) The University of Virginia (as it would later be called) is not sequestered or isolated. It fosters communal living with a common mission where not only the academic activities of the students are considered but also their extracurricular ones as well. The University of Virginia expressed "Jefferson's own views on education and planning, [and] also summarizes a basic trait of American higher education from the colonial period to the twentieth century; the conception of colleges and universities in themselves – in effect, as cities in microcosm.[12]"

The most significant characteristic that helped shape American colleges is the inclusion of student housing on its campuses. Historically distinctive to American colleges and universities, American institutions from their inception provided housing for their students. That's not to say that the American University did not borrow ideas from its European precedents, but this implemented adaptation lead to the development of a uniquely American planning tradition. Paul Turner in his book *Campus: An American Planning Tradition* characterizes the evolution of campus planning as having, "… an independent history, evolving its own forms and producing its own innovations, less subject to European fashion then other fields of architecture or design. The educational institutions of Europe simply were not appropriate models for American schools, which developed their own original character, requiring new forms of physical planning. The American campus, from the beginning, has been shaped less by European precedents than by the social, economic and cultural forces around it. As a result, it has been the laboratory for perhaps the most distinctively American experiments in architectural planning."[13] The founders of early American colleges recognized their responsibility to create not only a place of learning, but also one that exemplified, reflected and formulated the ideals of a burgeoning country. Perhaps one of the most significant examples of public space making on campus is demonstrated at Yale University. From its inception, the Yale Campus has positioned itself as an active participant in the larger community of New Haven, Connecticut.

Yale's physical relationship to the Green of New Haven helped position itself relative to the city. Yale's campus developed on the northwest edge of the Green (appropriately on "College Street"). Its genesis was a single row of buildings that fronted this civic open space. As the college grew from its original layout of three buildings, its linear organization was unique in that it did not form the traditional open-ended courtyard but rather established an *edge* along the city block that simultaneously acted as *center*. The buildings were pulled back from the street and in turn created an open lawn with a fence that fronted the Green. The *Yale Fence*, as it has hence been referred, became a meeting place for students and citizens alike.

An 1828 Yale study demonstrated that attention was paid to not only the academic needs of the students, but also their extracurricular ones. "The paternal character of college government requires that the students should be collected together as to constitute one family… that suitable buildings be provided for the residence of the students."[14] American colleges' desire to undertake a more holistic and paternalistic nurturing of its students broke from European traditions. Furthermore, this distinction between European precedents and American examples resulted in entirely different formal planning strategies.

The initial gesture of the *Yale Fence* became the precedent for the future development of a campus planning strategy that is intertwined and integrated with the New Haven. Yale's campus occupies the city block by block. The campus buildings define the blocks that in turn create the street. The physical and cultural transparency of these Yale blocks to the city streets varies from situation to situation. Most residential quads are protected and private, but other blocks such as Sterling Library is open to the public. Ezra Stiles and Morse Colleges, by Eero Saarinen is perhaps best demonstrates how Yale University and the city of New Haven share a series of interconnected public spaces. These residential colleges participate in space making within the campus context and the city blocks adjacent to them.

In 1955 Yale had set into motion the development of newly acquired land. Yale's president, A. Whitney Griswold, adamantly insisted that the university construct colleges instead of dormitories. "Much more than mere housing, the college provided an academic way of life, with meal service, cultural activities, sport, student study, and seminars with the 'college master' all taking place in one location… It was a microcosm or social life and the basis of the Yale educational system."[15] Saarinen's design solution consisted of two colleges separated by a pedestrian street that connects a small shopping district on New Haven's Broadway to Yale University's Paine Whitney Gymnasium. The siting of the project creates a series of public spaces, both interior and exterior. Facing the gym, Saarinen created a large semicircular outdoor room. This large grassy space is spatially contained while simultaneously being visually open. On Broadway, a small commercial district, Saarinen lined the street with storefronts. These three gestures continued the traditions of the Yale Fence by reaffirming the relationship between the city and university (see image 3).

Saarinen understood the significance of the college tradition at Yale: not only the cultural aspects but the physical ones as well. Just as in other colleges, such as Trumball and Bradford that are situated along a series of sequential courtyards, Saarinen organized Morse and Stiles around numerous gathering spaces of various scales, functions and privacy. These gathering spaces facilitated the culture of Yale by establishing places to collect. Morse and Stiles' civic gathering spaces funstion at multiple scales. They operate at the scale of the rooms, where individual rooms[16] are connected by circulation (corridors and stairs); which subsequently are clustered around larger spaces such as classrooms and dining facilities; and lastly the buildings themselves form a series of outdoor gathering spaces, both public and private.

Perhaps one of Saarinen's greatest achievements in creating a public realm that symbolically (and visually) links the university with the New Haven occurs in his pedestrian street that links the colleges with the city (see image 4). This linear path visually connects the Gothic tower of Paine Whitney Gymnasium with the residential colleges. Morse and Styles colleges are articulated as a series of small citadel like clusters. The gymnasium's neogothic tower in the background mimics these forms: collapsing the perspective. As one moves through the space, the colleges and gymnasium are visually linked creating one singular image. These cube-like forms operate at many scales. At an even smaller scale, a series of sculptures by Costantino Nivola participate in this visual phenomenon. These small cubic lights participate in inverting the perceived scale of objects in the foreground in relation to objects in the background.

Similar to more traditional housing types, the nature of the residence hall is social. It is composed of repetitive private elements with larger scaled, public spaces interspersed throughout. Many times these spaces are corridors and other circulation spaces that provide opportunity for interaction – the *street*, if you will. Residence halls also have a rich history of space making on campuses: developing a sophisticated public, spatial sequences. Furthermore, the social nature of residence halls mediates and facilitates many different constituents – the students who live in them, other university students, and non-students living in the adjacent neighborhoods who have access to the public spaces within them.

The introduction of student housing in college campuses ushered in a unique planning tradition in America. Their contributions to the built environment (physical and cultural) are testaments to the significance of social public spaces. They reveal the importance of considering public spaces, at all scales – from the macro to the micro, when developing new buildings on a campus.

Student housing has provided a significant social component that contributes to the mission of the college in a meaningful manner. Architecture is inseparable from its social context. What and how we build conveys and communicates who we are. Therefore educational institutions have implications and responsibilities beyond educating; they have the responsibility to shape the built environment with public gathering spaces that are accessible and open to all. The continued inclusion of public space in college campuses demonstrates that civic life is valued and necessary.

Notes

[1] From Donald J. Olsen's book T*he City as a Work of Art* quoting Edward Shorter, 89.
[2] Kenneth Jackson, *Crabgrass Frontier* (New York, Oxford: Oxford University Press) 272.
[3] I am referring to the most prolific housing typology that exists in America today – the single family detached house situated in low-density neighborhoods. From the 1890's until the 1950's, the percentage increase in the population and in new housing units remained consistent. In the 1970's, however, there was a drastic increase in the percentage of new housing units (26.7%) while the population increased by only 11.4% (from: http://www.census.gov/apsd/wepeople/we-6.pdf). These statistics demonstrate that the housing densities significantly decreased for the first time in eighty years due to the proliferation of the single-family house. While the single-family house has remained consistently the predominant housing type in America from 1940 through 2000 (roughly 60%), by 1960 more than two thirds of the total housing inventory was made up of the single-family detached house (from: http://www.census.gov/hhes/www/housing/census/historic/units.html).
[4] Giambattista Nolli's 1748 engraving of Rome depicts the rich character of the city's open civic spaces at the macro scale of the city. Nolli's map built upon Bufalini's map of 1551 with a few notable changes: the maps were reoriented with magnetic north up, it was drawn more accurately and most significantly rendered the public realm visible within the actual buildings so that they were understood as a continuous fabric which wove through the entire city: from streets, to piazzas, and into civic structures.
[5] Union College was designed by Joseph Jacques Ramee.
[6] Paul Turner *Campus An American Planning Tradition* (Cambridge and London: The MIT Press) 71.
[7] For more on this subject, please see Paul Turner in his book *Campus: An American Planning Tradition* where he outlines the development of the first American colleges and contrasts them to their European precedents. This thorough book examines the history of the development of American colleges and universities.
[8] Antonio Roman *Eero Saarinen An Architecture of Multiplicity* (New York: Princeton Architectural Press) 145.
[9] The first college founded in America was Harvard in 1636; the next was The College of William and Mary in Virginia in 1693 and third was Yale University in 1701.
[10] Jefferson was on the commission to see that the planning and execution of Washington D.C. was completed, he undoubtedly witnessed the dignity that the open-ended, civic axial space had to offer and appropriated it for the design of the University of Virginia in 1819.
[11] New York City's population at that time was 80,000, Philadelphia – 40,000 and Washington DC the new capitol city – 15,000.
[12] Paul Turner *Campus An American Planning Tradition* (Cambridge and London: The MIT Press) 3.
[13] Paul Turner *Campus An American Planning Tradition* (Cambridge and London: The MIT Press) 6.
[14] Ibid 55.
[15] Antonio Roman *Eero Saarinen An Architecture of Multiplicity* (New York: Princeton Architectural Press) 79.
[16] Saarinen believed that the collective should not subjugate the individual. He wanted to emphasize the individual and he did so by making the dorm rooms as unique as possible. "Talks with students strengthened our belief that rooms should be as individual as possible, as random as those of an old inn rather than as standardized as those in a modern motel." As a result 72% of the rooms are singles. Antonio Roman *Eero Saarinen An Architecture of Multiplicity* (New York: Princeton Architectural Press) 65.

Selected Bibliography

Beauregard, Robert A., *Voices of Decline*. Cambridge: Blackwell Publishers, 1993.

Brawne, Michael, *University of Virginia Tha Lawn Thomas Jefferson*. London: Phaidon Press 1994.

Jackson, Kenneth T., Crabgrass Frontier the Suburbanization of the United States. New York, Oxford: Oxford University Press, 1985.

McKenzie, Evan, *Privatopia Homeowner Associations and the Rise of Residential Private Governmen*t, New Haven and London: Yale University Press, 1994.

Olsen, Donald J., *The City as a Work of Art London*, Paris, Vienna. New Haven and London: Yale University Press, 1986.

Pelkonen and Albrecht, *Eero Saarinen Shaping the Future*. New Haven and London: Yale University Press, 2006.

Roman, Antonio, *Eero Saarinen An Architecture of Multiplicity*. New York: Princeton Architectural Press, 2003.

Sennett, Richard, *The Fall of Public Man*. New York, London: W.W. Norton & Company, 1992.

Turner, Paul Venable, *Campus An American Planning Tradition*. Cambridge and London: The MIT Press, 1987.

Photo Credits

Image 1: "Richie", photographed by Bill Owens from the Internet.

Image 2: Plan of University of Virginia from the Internet.

Image 3: Plan of Morse and Stiles Colleges from the Internet.

Image 4: View of public path towards Payne Whitney Gymnasium at Morse and Stiles Colleges from the Internet.

Evolution of Moscow Housing Development

The Moscow is historically developed as a radial-ring urban system surrounding the Kremlin. The apartment houses are located along the wide streets and they had the gardens. The city housing initially was of a very low density. “Moscow is a big village” – that has been the most popular expression about the city of that time and it has been reflecting the city peculiarity during long period of time. The housing is most brightly reflected the Muscovite life, the city economical and the social character. The housing is vividly displayed the time of its construction. We see not only the exterior elevations and perspectives, but also the entire residential structure. It’s very natural that during the time the essential changes are happening. The city growth taken together with all the civilization development is changed its general structure. In such a paper it is proposed to regard the formation of Moscow housing as a ring-shaped planning structure appeared in different times. But its regard as a number of circles – five areas represented as the rings – is definitely schematic and conventional. These straits or rings differ by their width and inner planning structure, because they are comprised of a great number of various public buildings, industrial zones and relaxation areas, etc. These functional zones and activities have a complicated interlacement. It is offered to concentrate on schematic and the most general consideration of housing in various rings of urban-planning structure of Moscow.

1. The first territory is the central ring.

The ancient housing belonging to the Napoleon time before a fire in Moscow does not actually exist. It has remained very few residential buildings. To be wooden the muscovite residential dwelling massif is changed very rapidly. While the War with Napoleon in 1812 the wooden housing was practically eliminated, but this situation stimulated an active stone building or imitating of the stone building types in timber structure. The Empire style (so called Russian Classicism) is getting wide spread in the period active city reconstruction and it formed entire city stylistics of that time. Simultaneously the architecture of buildings and the city environment formation are composed most organically as the unified and indivisible architectural system. The buildings are designed very freely and inventively with use of the colonnades and the elements classical decoration.
In accordance with the legend the building architectural elements such as the columns, cornices, frontons, porticos, window and door decorative elements, etc. had been bought and transported by the sledge to its future owner, where the craftsmen had rapidly assembled them together to create a great number of houses. The housing development was of the estate type. The estate in the city comprised a bug central house where the noble’s family lived, a lot smaller houses where the servants lived, a stable and the secondary buildings. Very often the estate had an adjoined territory. The estates housing was of a low density and enriched by the greenery including the private gardens. After the lapse of a time this type practically formed the parcels of land in the urban development. The great new apartments demand at the limited territory is leaded to the rise of number of storey in blocks.

While raising the city population (at soviet period) the big historical apartments were gradually filled by the separated families, one family by the room and so called communal apartments were formed. That is to say the whole family occupied one room at the apartment. Hence the unique kitchen with six or more gas stoves, a lavatory and a bathroom were used by the several families (from 3 to 8) living at one and the same apartment. Actually that at the present time the whole residential found is renovated.

The inner building structure is getting very complicated, the new materials are used and the eclectic decoration is revealing at the facades. These elements are forming the historical background of the central Moscow. This background is completed by Art Nouveau styled buildings separate inclusions. There are gradually appeared the income-houses comprised of the multileveled structures with many apartments, and this type retained up to present time.

2. The second ring dated from the 1920-1930s.

The beginning of the XX century is characterized by a mass population inflow that was leading to the socialization of life. It is starting a process of the city analysis based on population way of life. The architecture is getting subject of a science.
The social cities are constructed in the USSR and the new types of the buildings are arisen – the Avant-Garde constructions, the communal houses, where generalization of life reaches its extremes. There are appeared: a new social housing, an essential collectivization of the residential activities, the common canteens, the laundries and the kindergartens, etc. The individual sphere was reduced: the residential unite-cabin. The function and a new vision on life totally determined an approach to architecture. There are appeared the urban planning theories and the urban norms are elaborated. The typical working settlements are constructed in Moscow. They occupied the territories on the previous Moscow periphery, neighboring to the development consisited of separate rural-type timber hats (izba) with plots of land. Sometimes there were appeared the buildings with the functions of social activities like the workers clubs, the cinema theaters, the canteens and the first stadiums with ground fields. The architecture is received the geometric purity of its forms, it was marked by the elimination of the all classical elements. It was a confirmation of the aesthetics both of the poetry and the pragmatism in architectural volume. It is obtaining the new constructive schemes and materials, the different glazing. There were used the rectangular windows, the linear stripes of windows and the complete glazing with enormous area. The architecture received a division of the wall and the supporting framework. The engineering supplies were added to the buildings. The Moscow famous architectural school of that time – WKHUTEMAS is comparable with German well-known architectural school of Bauhaus. The buildings are gathering into united residential and public complexes. The attention was concentrated on the urban planning way of development based on the new aesthetic principles. It was getting the fight with so called desurbanistic trend. The entire urban development is occurred within the very limited economical opportunities.

3. The third ring dated from the 1945-1956s is represented by so called “New Empire Style” architecture and urban structure.

The construction after the Second World War is characterized by return to the pseudo-classicism. The interest for the Renaissance epoch is laid into foundation of the “Stalin’s period architecture”. The victory in the War and glorification of the country were confirmed by use of the architectural images of Renaissance and images of the ancient Rome, for instance, the sculptural motifs of harvest with the exaggerated dimensions of fruits in the decorative freezes or military motifs with compositions of the antique weapons. The parade character of the prospects and the streets are formed by the buildings elevations of a “Palazzo-type”, these are designed and interpreted by the major authorities from the Academy of Architecture of the USSR. The architecture was given the image of the optimism, happiness and greatness of the State.
It was organized a construction of the “Palazzo” style residential buildings of 12 floors along the wide prospects. They were specified by the massive base, the rustic walls at the ground levels, the elevation finished by the moldings and completed by the heavy cornices, pilasters and columns, the buildings adorning by the turrets, and finished be the natural stone. The architecture was mainly finished by ceramic tiles. It was made a lot of individual plastering details. The themes of the victory in the Great Patriotic War and of the achievements in labor, agriculture and science are getting central for the sculptural plastic. The city is comprehended as a system of the architectural ensembles. The entire architecture and arts could be treated as a style of the popular optimism and so called “Socialist Realism”.
In the 1950s there are constructed the high-raise buildings crowded by the spires. The ensemble of the whole city is decided as comprising the seven high-raise buildings of different functional use including the residential blocks, hotels, administrative and educational buildings. They are located around unfulfilled Palace of Soviets and they defined the Moscow skyline in a great extent. It was a very short period of time, but the buildings of that period received the international acknowledgement and had a significant influence at the modern architecture formation.

4. The forth ring constructed at the 1960-1980s is characterized by a transition to an industrial housing and the panel prefabricated buildings.

The first of them were of the 5 floors without an elevator. Later there are erected the higher buildings of the 9 floors. In such a period it’s happen an excusive intake of the working population to the Moscow periphery. The housing was organized in the autonomous residential districts and they were of a medium density. It is inserted the strict urban rationing and rigid norms are come into power as at the apartment level, as at the level of an urban territory. It was proposed a system of the urban units: 1) the residential group with population of 3000 inhabitants; 2) so called “micro-district” with population of 6000-10000 inhabitants; and 3) the residential district with population of 30000-60000 inhabitants.

Each of these planning elements had his own center with specific pattern of limited services. For instance, the residential group assumed dislocation of a kindergarten, “micro-district” had one school, etc. The image of housing development was exclusively monotonous and boring. The set of the prefabricated panels and industrial elements was very small and the possibilities of their combination are restricted. At the same time the architects made the efforts to create the large scale ensembles and the comfortable spaces for people. The architects used the rhythmic development formations, the iteration of the groups collected of the separate typical buildings, played with skyline of the city. There are designed the huge city districts with population up to 200000 inhabitants with high-rise paneled buildings. These districts have been realized till nowadays, certainly now the new improved planning organization of typical buildings is applied.

There were the first realizations of the families settling apart from communal apartments but with taking into account economical factors using the low-cost constructions. Each family obtained its own apartment free by the state account. Everything was made according to the rigid norms – the residential area of 9 square meters per person. This mass construction had an important significance for the families coming from the communal apartments, especially at first stage. Further the industrial construction is developed, but the 5 floor buildings of the first years had been destroyed.

5. The fifth ring. The 1980-1990s are featured by the further and huge city enlargement.

It is period of a periphery high-rise development (of the 20s floors buildings). There are constructed the districts of high density comprising up to 200 thousands inhabitants. The latest period is marked by an appearance of the mass commercial housing. At the same time it is a period of the individual architectural forms creation. It is continued an industrial housing construction using the new constructive materials in a large scale and also of the ways of inner planning and design decisions, etc. The appearing of the commercial housing determined a big variety of the typological samples and the costs for the apartments. And they are presented at one and the same building volume. It is occurred the densification of the city tissue and characteristic especially for the center. The profitable buildings of so called “candela-type” are inserted into development wherever it is possible or not. Within the free formation of the development entire services are offered for the inhabitants’ choice. It is appeared a system of parking places and garages.
But at the same time after monotonous, uniform constructions the architects and customs have fallen upon, to say, to the freedom of an architectural creation. The buildings are getting the different forms and architectural décor is taken from the any historical period. Often they are of the doubtful taste and not always well corresponding to the contemporary tendencies in architecture.
Now there are approximately the 14 millions inhabitants in Moscow. The city radius is approximately around 30 km. The entire circles have not got rigid borders. Sometimes the territories of the different periods are mixed or interwoven to be intruded into each other. The major nowadays problems are the following:
1) the substitution of the low-rise (of 5-9 floors) panel housing; 2) the release and recycling of the former industrial territories; 3) the improvement of the public areas and traffic structure; 4) the interaction between Moscow city and Moscow Region including the “Big Moscow” concept into consideration.
Thus, the “Empire style” buildings, the constructivist public and residential buildings, the “Stalin’s time” high-rise buildings and the contemporary huge housing “massifs” – combination of these urban types is determining a variety of the Muscovite urban planning system and creating the picture of the Moscow residential areas now.

Legenda

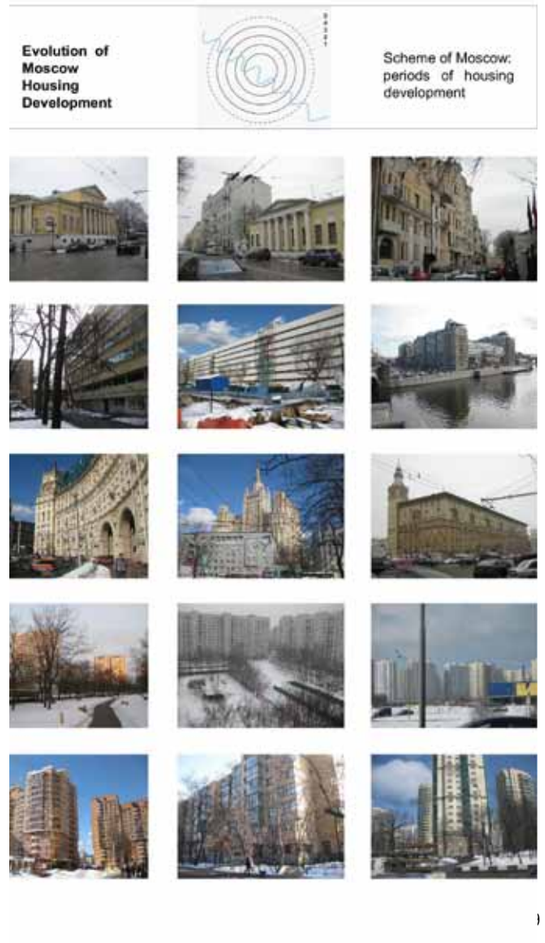
1st ring. The Historical city (up to completion of Christ the Savior Cathedral)

2nd ring. The Constructivism and architecture before the Second World War (up to the beginning of the Palace of Soviets)

3rd ring. The Stalin’s architecture (up to completion of the seven high-rise buildings working as the landmarks created the Moscow ensemble)

4th ring. The industrial prefabricated architecture (up to beginning the construction of the Moscow City)

5th ring. The recent time architecture (everything is ahead)



Sutida Sattayakorn
Kasetsart University Bangkok, Thailand

Space as a Place for Social Interaction: The Cases of Housing in Bangkok

1. Introduction

Concept of sustainability comprises environment, social and economic dimensions. These three major strains are inter-linked and should not be isolated (Khan, 1995; Thorns, 2004; Lewis 2005). Emphasis is also placed on social sustainability as another key for the development of sustainable community, and recognized social interaction as one of the important indicators.

Without awareness on social sustainability, rapid urban development of Thailand has led to a growing number of urban housing that decline in quality of social life (Kingdom of Thailand NCSD Rio+10, 2001). Nevertheless, Thai vernacular architecture greatly reflects the integrated concept of sustainability into every aspect. Basic patterns of space in traditional villages that creates supportive environment for social interaction could be accountable to urban housing community. Thus, the main research question is: to what extent do the spatial design of housing contribute to retain a strong socialisation among residents. The experiences form urban housing in Bangkok on the importance of local wisdom that facilitates better social interaction has been taking into consideration of this study.

This paper is a branch of the 3 years research project on "Holistic Study for the Adaptability in the Different Context of Tai-Lao Ethnic in Central Region Basin of Thailand". One part of the main research focuses on interrelationship of physical space and ways of living within Tai-Lao villages. This paper pursues one objective of the main research on emphasizing a notion of place for socializing that underpinned by local village's philosophy in design of today housing community.

2. Research objectives

This paper has two main research objectives. The first is to explore patterns of social interaction within physical spaces of housing community in Bangkok on a notion of traditional village philosophy. The second is to investigate the interrelationship between physical space and place for social contact in order to identify housing design features that are likely to promote social interaction.

3. Research methods

This study investigated research questions through a mixture of quantitative and qualitative field research. Mainly, detailed observation was used as a method to gather visual information and evidence on social interaction patterns, physical characteristics and utilizations of space within the community. Researcher acted as a participant observer by making several daytime visits and overnight stays in the case study areas. Observations were recorded as field notes, maps, and sketches. Semi-structured, in-depth interview had been done to obtain intangible information on residents' satisfaction and opinion. Selected features identified from local village's philosophy were used to measure residents' social interaction.

All collected data was analyzed by using a content analysis. A visual analysis was used for visual data collected from field observation to interpret the patterns of social interaction. The complex findings will then be triangulated to investigate the interrelation of physical space and place for social interaction within housing community and to identify factors that influences it.

Parameter of case studies covers areas in suburb of Bangkok where new housing projects have been widely developed. The main criteria for case study selection were emphasized on the community that adopts concept and characteristic of local community. The case study also reflects major types of dwelling in Bangkok that are detached and row house.

4. Housing design and social interaction in context of Thailand

The problem of decreasing social cohesion resulting from a lack of social interaction is a significant social issue in Thai community. The urban transformation has led to many environmental and social problems, for example weak social cohesion, lack of community and public participation, less social interaction, and a decline in the quality of life (Kingdom of Thailand NCSD Rio+10, 2001). Yet, Bangkok generated more complex responses, both positive and negative, to a modernising society.

Over the past 40 years, residential areas are the most dominant land uses of Bangkok. The provision of housing and suburbanisation process becomes a critical dimension in urban development and changes of Bangkok (Askew, 2002). The growth of housing estate for the middle classes has tended to materialism approach. Likewise, lower-middle income and other social housing have had similar effects not only on the physical characteristics of the city, but socio-cultural evolution of a whole Bangkok. Especially in the case of young nuclear families in new urban housing, their social activities are relatively limited to only passive contacts: seeing and hearing.

Although the urban life in modern housing estates overwhelmingly responds to private consumption and material, the high quality social environment within neighbourhood has turned up people's attention. Social aspects of housing have seen as one indicator of neighbourhood liveability. Askew (2002) stated that major concerns of housing residents include a perception of place identity, sense of control or confidence in the surrounding social environments. Results from a housing survey conducted by AIT revealed that the thoughtfulness of middle-class home purchasers in Bangkok emphasized on the degree of neighbourhood friendliness as the major criterion for choosing a housing estate, even further the consideration of price (Thongchai et al.,1986). Recently, housing developers have been aware of and tried to create a pleasant place to live. A campaign of 'beautiful-community' by San-Siri property development in 2007 is one of the examples. Indeed, an attempt to deliver liveable social environment for housing estates has evidently introduced since 1992. Baan Suan Rim Klong housing estate by Plan Architect Co.,Ltd is an outstanding project that adopt the idea of liveable community through its physical design. Therefore, this project was chosen as a case study for this research.

5. Morphological structure of Baan-Suan Rim Klong

The case study, namely Baan-Suan Rim Klong, is located on flat land in eastern suburb of Bangkok by Lum-Sali canal. This 'mubaanchatsan' or developer-built housing estate for the middle-income privately owned by 79 households. An implicit concept of resident's interaction on a notion of traditional Thai community had been integrated in this housing project. The main idea for community development was to create place identity through the high quality of housing with modern lifestyle while supporting community participation.

Baan-Suan Rim Klong community is gated and surrounded by undeveloped land and neighbour housings. The village layout is curvilinear street patterns with a central green space and share parking lots. Most dwellings, oriented to traditional way of living by having canal entrance, are well connected via wooden walkways along the small man-made canal. Houses are detached, semi-detached, and row houses with modern Thai style. There is one communal multi-purpose building with library room, shops, sport facilities, swimming pool, and playground.

6. Learning from Tai-Lao local village

In general, an attempt to maintain good relationships among neighbours is sensibly important. Local Thai neighbourhood is normally built up as a family, and that influences the high intensity social contacts in residents' private and semi-private spaces. According to participant observation in Tai-Lao local village in central region of Thailand, the communities still maintain their local culture, traditional lifestyle, vernacular houses, and fertility of natural environments. Physical characteristic of space within Tai-Lao community reflects a range of patterns and the utilisations, which expresses the meaning of traditional culture that influenced by an afterlife belief.

It can be learned that socializing areas, ranging from a small and private such as "Tai-Thun" to a large public area of the village, provides resources for the conduct of interactions. Private space under the house or "Tai-Thun" has been losing its role as a place for private socializing, however, "Tai-Thun" in some cases engages with public activities. Daily social activities have been brought to semi-public and public areas. In contrast, transitional space between dwellings and community public spaces still maintain their psychological meaning of sharing space as in the past. Furthermore, the appearance of housing clusters, location of local temple, and community public area or "Lan Klang Baan" reflects a strong relationship of people within a community.

7. Social interaction patterns within physical spaces and places in housing community in Bangkok

Social activities of residents in Baan-Suan Rim Klong involve different forms of social contact, ranging from lower intensity regarding passive contacts at individual level to higher intensity at community level. The top five destinations where residents usually use for socialising are the streets in front of dwellings; open green space; area around dwellings; community shops & restaurants; and sport facilities. Focusing on the physical characteristic of space, different patterns of social activities occur in those places can be summarised in three levels as follow. (Fig. 1)

7.1 Private space of dwelling

Distinctive space of "Tai-Thun", a space underneath the elevated traditional Thai house on stilts to avoid flooding, has performed as versatile open space for private use. With its open characteristics, this space facilitates air circulation that offered a more comfortable living space and brings on a good visibility and capability to encourage various forms of social interaction. Apparently, the characteristic of "Tai-Thun" has been replaced with the typical brick wall-enclosed as illustrated in figure 1. So-called "modern Thai styles" house had lost its physical characteristic of openness that provides high possibilities for meeting, seeing, and hearing people. In spite of that, the high intensity contact including private gathering has brought into the enclosed space at the ground floor of dwelling.

7.2 Space between dwelling

Space between dwellings greatly influences social interaction at higher level. As found in Baan-Suan Rim Klong, social activities frequently occur in the area around dwellings particularly in living areas by the canal. Most activities are with higher intensity such as talking, having dinner and drinking, and working on their hobby. By repeating local village concept, the space between dwelling compounds acts like a gradual transition between private and public area. This semi-private outdoor space between dwellings also being used as a sharing space and it responds well to residents' social interaction.

Figure 2 shows that the space between dwellings of Baan-Suan Rim Klong is clearly defined by physical boundary unlike those in local Tai-Lao village where the spaces in between are well integrated and connected. Surprisingly, this semi-private area behind the knee height fences results in a better opportunity for the low intensity contacts. Residents are able to see throughout out surroundings from their private space while have not lost their senses of privacy and security. An ability to observe while sitting outside allow parents to have more confident in letting their children play with their neighbours. Even though the primary social contacts such as saying hello and talking largely occurred when people are outside their private dwelling, such transitional space also enables higher intensity of activities.

Furthermore, physical boundary of community is another vital factor to encourage social activities. It is obvious that gated community like Baan-Suan Rim Klong enables a sense of safety for residents. This refers not only to security entrance, but also other from of physical enclosure, such as a single entrance, a remote access only for residents, or natural boundary.

7.3 Community public areas

Communal space of Baan-Suan Rim Klong had combined the local wisdom of "Lan Klang Bann". According to local village philosophy, public spaces of the community usually refer to a local temple and "Lan Klang Baan" which means a flat plain located in the village centre. However, "Lan Klang Bann" of this urban housing is not an earthy flat plain. It comprises of both indoor and outdoor communal facilities; including green space and community building that provides sport facilities and local amenities. Residents could easily access to those key facilities by many access points on shared wooden walkways along the canal as shown in figure 3. While formal community meetings and special events occur in the communal building, casual gathering and other forms of lower intensity contact often found in a green space in the middle of community.

Barton (2003) pointed out that the availability of local facilities is a key for residents' interaction. The utilisation of local facilities that available in the community largely benefits social relation. Residents who use local amenities have more opportunities to create moderate social contacts. Having said that, connectivity to central business district and adequacy of community facilities are other keys for resident in deciding whether to use them, and that cut down chances for neighbourhood contacts. Many interviewees from Baan-Suan Rim Klong are concerned about a variety of choices and a quality of service and facilities. It is often that shopping mall in city centre that offer a wider range of service and facilities with higher standard are more fashionably attractive. People will not refuse to use the local if there is a good one. However, an attempt to encourage utilizations of local amenities are most of the times overcome by intervening factors such as lifestyle and background.

In addition, social interactions are enhanced when people have more opportunities for contact by living in close proximity to others and having appropriate space for interaction (Festinger et al., 1950). Similarly, proximity largely influences the patterns of social interaction as often described in Thai as "Baan Glai Rouen Kiang" meaning houses next door. In case of Baan-Suan Rim Klong, residents are living in close proximity. They are tight up together by the wooden walkways along the canal. This offers a greater chance for people to repeat passive contact, which lead to other form of higher intensity activity.

8. Discussion

8.1 Interrelation of physical space and place for social interaction in housing community in Bangkok

Housing layout and design features have influences on different patterns of social interaction among residents in Thai community. Rather than private space of dwelling, daily social activities have been brought to semi-private and public areas. While the transitional space between private and public plays an important part in supporting or preventing peoples' contact at the individual (private) level, the adequacy of community arrangements and local amenities has great influences on social interaction at community (public) level. Purposively designed community buildings are rather used only for special events and formal gathering; daily social activities occur more in informal and human-friendly spaces.

Most of daily activities often occur in outdoor spaces, including transitional space between private dwellings and the public areas. However, people still seek for socio-physical setting where they feel comfortable. More frequently, many social activities at high intensity, such as casual gathering, take place in the private spaces of dwelling where people feel more private and intimate.

However, there are various dimensions that built up the concept of social interaction in housing community nowadays. Apart from psychological needs, cultural factors, and economic characteristics; the aspects of physical design are largely integrated with psychological sense of users. Yet, the conditions of housing concerning quality of spaces and places appeared to be another crucial factor in the context of Bangkok. Housing design aspects in relation to comfort, convenience, maintenance and cleanliness, and privacy are more concerned by residents of Bangkok.

8.2 Design concerns

As discussed in previous section, the physical characteristics of housing design alone could not create a positive influence on social contacts unless the psychological senses of feature are appropriate. The evidence from fieldwork reveals that a success in encouraging social interaction can only be achieved if a quality of places is right. The quality of community space as defined by this research as design concerns are bounded to a psychological satisfaction of people on comfort and convenience; safety and privacy; functional and physical attractiveness; maintenance and cleanliness; and also a socio-cultural sense of liveliness and friendliness. Therefore, a concern about community housing design should not only emphasis on providing enough physical settings, but also integrating an idea of achieving high quality design.

Additionally, residents also brought up other important factors that influence social activities with their neighbours. The aspects of personal factor, needs for contact, attitudes and lifestyle, chances for contacts, and personal issues, sometimes have direct impact on their social interaction rather than physical factor. Therefore, apart from focusing on the physical design features, these extrinsic factors should be as the intervention.

9. Conclusions

The patterns of neighbourhood interaction in Thai communities are influenced by multivariate factors including physical settings of house and community, psychological needs for security and livelihood, cultural factors such as lifestyle and pattern of daily life, and economic characteristic such as level of income and occupation. Among those factors, psychological meaning and belief, socio-cultural and symbolic features of spaces could be acclaimed as a significant factor in facilitating social interaction. As lessons from local village suggests that strong senses of community and high social contact is underpinned by merging socio-cultural behaviour in physical features of place. Thus, emphasize should be on a notion of place that represents the continuing influence of indigenous Thai way of life.

Social interaction in Thai housing community involves not only tangible factors of physical environments, but also intangible factors such as a socio-cultural sense of family based community. Nevertheless, the physical characteristic of place greatly increases the window of opportunity for social activities by providing resources to conduct social interactions. The resources that mainly enhance social activity include opportunity for contact, proximity to others, and appropriate space to interact. Physical setting is also notably important as background and starting point for other forms of contact. To offer high possibility for social and cultural phenomena, attention should be shifted to developing the quality of place as well as focusing on the co-existing of both new lifestyles and indigenous way of living.

Despite of an attempt of Baan-Suan Rim Klong to harmonise with traditional village concept, this ideal is rarely put into practice perfectly. The modern housing have continued to develop and strangely juxtaposed with indigenous way of life. It can be conceived that traditional way of social interaction have eventually transform to the concept of urbanism. Although the emergence of urban culture could open up new from of social conversation and activities, the future direction of the true Thai way of life has been turning to be more individual and that has evolved over a whole Thai society. Thus, a balance integration between new development and traditional culture should be at appropriate level in order maintain a significant value of neighbourhood interaction.

10. Acknowledgements

Special thanks to Thailand Research Fund (TRF), Office of the Higher Education Comission, and Kasetsart University for funding the research on “Holistic Study for the Adabtability in the Different Context of Tai-Lao Etnic in Central Region Basin of Thailand” by Professor Ornsiri Panin, which this paper being part of. Special graditudes for the advice and guidance to Professor Ornsiri Panin and Assistant Professor Dr. Wandee Pinijvarasin. Also, I would like to thank you all who have kindly contributed to this paper.

Biliography

Askew M., *Bangkok: Place, Practice and Representation*, Routledge, London, 2002.

Barton H., Grant M., Guise R. *Shaping Neighbourhoods: A guide for heath, sustainability and vitality*, Spon Press, London, 2003.

Festinger L., Schachter S., Back K., *Social Pressures in Informal Groups*, Stanford University Press, Stanford, CA, 1950.

Fleming R., Baum A., Singer J. E., *Social support and the physical environment*, in Cohen S., and Syme S. L. (Eds), *Social support and health*, Academic Press, Orlando, FL, 1985.

Gehl J., *Life between buildings: using public space*, The Danish Architectureal Press, Copenhagen, 2001.

Khan M. A., *Sustainable development: the key concepts, issues and implications.Keynote paper given at the international sustainable development research conference, 27–29 march 1995*, Manchester, UK, in *Sustainable development*, Volume 3, Issue 2, pages 63-69, 1995.

Kingdom of Thailand; *Understanding Sustainable Development in the Thai Context*, in NCSD Rio+10 Report, Executive Report, 2001.

Lewis S., *Front to back: a design agenda for urban housing*, Architectural Press, Oxford, 2005.

Statement by Delegation of Thailand at the Official Segment of the 12th Session of Commission on Sustainable Development, 21 April 2004, in the *12th Session of United Nations Commission on Sustainable Development*, 2004

Thongchai S., Tips W.E.J., Sunanta S., *An evaluation of private housing estates in greater Bangkok, Division of Human Settlements, Asian Institute of Technology and Institute of Population Studies*, Chulalongkorn University, Bangkok, 1986.

Thorns D. C., *Creating sustainable housing: the challenge of moving beyond environmentalism to new models of social development*, University of Canterbury: Social Science Research Centre, New Zealand, 2004.

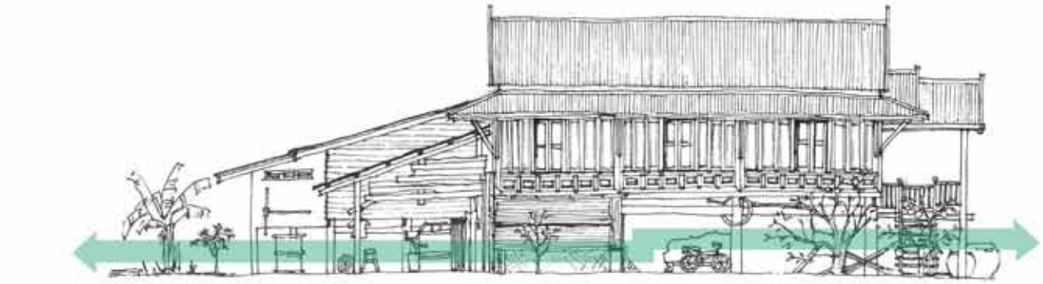


Figure 1. The transformation of private space within dwelling resulted in a missing physical characteristic of openness that provides high possibilities for passive social contact.

Figure 2. Space between dwellings of Baan-Suan Rim Klong, clearly defined by low boundaries to outline private space without blocking visibility, is recognised as gradual transition space between private and public.

Figure 3. Open green space in the middle of housing compounds is one of popular places for social activity. Each dwelling is well connected via the shared wooden walkways along the canal.

Reinhabiting, the house, the street and the city

Introduction:

Reinhabiting is a research project that considers existing buildings and public spaces in Spain as opportunities for a new approach to the way we inhabit them. The word involves inhabiting again, in an intensive simple manner, rethinking how spaces can be used – more than undertaking unnecessary alterations.
The term "reinhabiting" was developed by Habitar, a research group of the Catalan Polytechnic University UPC, during the years 2010 and 2011, in the context of a R & D project which results where shown in 6 exhibits at Nuevos Ministerios Gallery of Madrid. The project had funding from the Ministry of Housing. The index of the exhibits was defined by 9 themes, episodes, which have become 9 small books. The contents of all exposures can be consulted on-line () and we encourage their observation parallel to the reading of this text. This article will be focused on the proposals that emerged during the preparation of project and will develop the theoretical framework and architectural context from which they arose.

1st exhibition – episode 1 – What's reinhabiting?

Reinhabiting is to think of new use, different, or simply prolong the old, especially appropriate in a time like this and in a country like ours, with a oversized fleet of homes. In fact, today, with thousands of empty houses and as many second homes, industrial buildings and vacant infrastructures in good condition, to think about new homes or in any prefabrication, it seems a matter perfectly deferrable. It has past more than a hundred of years from the publication of *El Practicón*[2]. In it, the author Angel Muro, rose to culinary category the use of leftovers. This could be a way to define the aim of the project *Reinhabiting*: make the most of the leftovers.
The first exhibition[3] discussed the concept and objectives of the project Reinhabiting. Although these are several, there is a common goal of not obsessing about the "demolition and new construction," but to make the most of what already exists. Reinhabiting is an attitude of mind and so it refers to the subject rather than the object to itself. *Reinhabiting* means re-living something altering its use. It does not mean repair or consolidation and, of course, is not equivalent to a stylistic aggiornamento. Reinhabiting addresses some proposals that provide the dwellings with new services that are actually inexistent or improve their accessibility, their resources and, in general, their possibilities of use. But we also see how some of the interventions also involve substantial changes in urban structure, in transport and facilities, taking into consideration the always fertile relationship between the house and the street, which can itself become subject of intervention.
To demonstrate this fact in the first exhibition we exposed some suggestive cases: for example we compared the town of Arles (Fig. 1), the *reinhabitation* of a Roman ruin, with the attitude of the hermit crab, which uses an abandoned shell as a house. Also a set of pictures of nativity scenes help us to show the meaning of *reinhabiting*. In this case, an inhospitable place, as a stable, eventually becomes a household (Fig.2). We are also interested in returning to the people their condition of main character in architecture. From that point of view the emptiness shown at the picture of Las Meninas by Thierry and Bruno Lahontâa (Fig. 3, A and B) or the transformation of Saddam Hussein Palace into an inhospitable space (Fig. 4) after the American invasion demonstrate the capacity of human activity to transform an architectonic space.

2nd exhibition – episode 2 – Satellite rooms

The second exhibition developed the concept of satellite rooms[4] , a proposal to reinhabit a housing block. In this second exhibition we proposed the possibility to extend the dwellings temporary, adapting them to the changing needs of their residents, thanks to a reorganization of the whole building. The idea is to give the building a sufficient number of rooms, separated from the house, a few floors above or below, that allow to extend the home temporary to meet its needs and, once satisfied, free them for the use of other tenants of the block (fig. 5).
The beneficiaries of the *satellite* room are many. Some are related to the so-called extended family, such as old people requiring care without having to give up their privacy, the first steps towards the emancipation of a teenager or an adult child who returns after a separation. Others are related with the introduction of a workplace at home without interfering its comfort. Occasionally, there is simply the need of having a private space separate from the everyday annoyances of a house. It is not only a matter of a surface increase, but also of Benefits of an Autonomous and equipped room.
In the exhibition we showed several proposals for different public housing blocks in Spain. Taking into consideration the increasingly number of vacant homes, we proposed to replace some of the empty apartments of a block with a a set of rooms each of them equipped with independent access, private bathroom, kitchenette, and storage space. All around about 20 m^2, to accommodate, without leaving the building, situations like those described above (fig. 6). This is not about building new apartments in the block, but to complete existing ones.
These *reinhabiting* proposals were accompanied by historical references of discontinue homes, or in other words, houses where a part of it –usually a room- is separated from itself. This is the case of the dwellings in La Baixa, Lisbon, s. XVIII; the *chambres de bonne* of France from the XIX century; the service rooms for the bourgeoisie in Spain (fig. 7); the separate room of the apartments situated at 25 Street Versailles in Paris, 1928-31, designed by B. Lubetkin and H. Ginsberg; or most recent cases as the buildings that combine residential and office spaces as the case of the building design by Kengo Kuma in Tokyo (fig. 8).

3rd exhibition – episodes 3+4 – Domesticating the street

With "Domesticating the street"[5] we intended to return to the urban space its character of place, by encouraging social relations through a reflection on the characteristics of the street and the uses that can be developed in it beyond road traffic and pedestrians. To demonstrate this fact we chose a painting by Paolo Veronese, *The Feast in the House of Levi* (fig. 9) where the street is used as an extension of the house. It is a setting for a dinner, and a dinner is a domestic act.
Our proposals were linked to European and American experiences that aim to break the idea of the specialized street -the street as infrastructure- and return it to its condition of place. Actions like the Community Garden Movement (fig. 10) or the placement of chairs in Times Square (fig. 11), both in New York, or the square markets of Rome which change their appearance according to a schedule, or the snowed Amsterdam canals transformed into a flat surface perfect for ice skating (fig. 12). All these examples invite us to see the street as an open space ready to be used for civic activities, not just for the movement of vehicles.
In the exhibition we invited to do actions in public spaces such as those developed in Shared Space, a concept defined by the engineer Hans Moderman in the early seventies to solve traffic problems which nowadays continues to be alive thanks to an open platform held in internet. The concept of *Shared Space* proposes to de-specialize the street by building continuous pavements and eliminating traffic signs. In a similar way, the initiative *Parking-day*[6], developed in different U.S. cities, is also an invitation to use the street as an extension street of the domestic space (fig. 13). We also mentioned other initiatives as *Depave*[7], also from the United States, consisting of deasphalting abandoned areas for planting gardens and orchards instead for the service of the community (fig. 14). Finally, to make the most of our public space, we proposed the idea of using the street daily or weekly according to an schedule that would regulate its uses, in that way incompatible uses could operate in the same place at different times (children playing, market, movement of vehicles, etc).
The exhibition also encouraged to "*Reinhabit* the ground floor"[8] as a strategy to revitalize the streets extending to it the liveliness of indoor activities, diluting the limits between public and private. It aims to encourage the reconsideration of the former but increasingly current relations between work place and home, taking advantage of the distinctive qualities of the ground floor and preventing the deterioration of street life by giving new uses to many empty ground spaces.
The exhibit proposals invited to recuperate the ground floor as a space for housing in the compact Mediterranean cities, a house that could be combined with a work space. The home-store that characterized many ground floors until 30 years ago can be rethinked turning it into home-office or home-workshop that opens its activity to the street (fig. 15). Also the exhibit invited to regulate and encourage some commercial activities that occur in the threshold between public and private space (fig. 16). Finally, we collected several examples where were used awnings as a simple ephemeral measure that helps to break the rigid boundary that often exist between what is public and what is private (fig. 17 and 18).

4th exhibition – episodes 5+6 – Indoors

The fourth exhibition, titled "Indoors", addressed the issue of household organization, dealing with two concepts: first the role of doors in homes and on the other hand, the subject of infringing the use of some spaces to meet the needs of each resident (including those considered useless).
"More doors"[9] is the title of the fifth exhibition that proposed the refurbishment of dwellings just changing the quantity, position and typology of its doors. The flexibility of a house can be improved just adding a door (fig. 19 and 20). The exhibition was critical with the tendency of generating mono-spaces, instead of that we encourage to keep certain doors in order to have the option of adding or splitting rooms (fig. 21). The exhibition also showed several types of doors which design allows us to imagine a use beyond the circulation (fig. 22).
The sixth exhibition "Misusing"[10] invited us to rethink the use of certain conventional spaces of European houses as the hall or the living-dining room. The exhibition drew a critical point of view towards those homes where the living room has predominance over the other parts. This type of organization is in contradiction with the real use of the house and it is rather the expression of an *a priori* standard family organization that has nothing to do with the actual family caseloads (fig. 23).
The exhibition drew a series of proposals that substantially improved the use of the home through small internal reforms:
1-"A corridor plus" offered the possibility to resize our halls to improve its use. With a little more width the corridor may invite to work, play or even eat (fig. 24).
2-"A table in the kitchen," warned of the discomfort of Spanish conventional kitchens (narrow and specialized), reflecting on the fact that the kitchen often becomes a meeting place, make it wider it could be the substitute of the dining room (fig. 25).
3-"Enter through the kitchen," proposed a specific refurbishment for small apartments: to join the hall with the kitchen. We understood that the kitchen can be considered a "public" space of the house and it could be located closer to the entrance in order to free a room for other uses (fig. 26).
4-"Less hierarchy" invited to observe the house without the dimensional primacy of the living room above the other living spaces. The habit which force us to project the living room as the "center" of the house prevents us to reflect on other questions that should not be neglected: Why grouping all the bedrooms?, Why not to divide the living room in two? And even more, why there must be a living room? (Fig. 27).

5th exhibition – episodes 7+8 – Abandonment and opportunity [11]

In this episode we decided to think of the abandoned and vacant buildings as opportunities to revitalize the city from within, trying out alternatives to demolition and incorporating new uses such as housing. It is difficult to establish a clear "disused buildings" statistic, unless a particularly relevant situation occurs, such as that experienced by the metropolitan area of Barcelona, which in 2011 had a 14% of empty office buildings, the equivalent to 820,000 sqm[12]. It is also the case of Lisbon, with around 4,000 abandoned housing buildings - more than the 7% - as a result of a significant decrease in its population[13]. In many other situations, the abandoned buildings are dismantled public facilities, office buildings, hotels, health centers, obsolete and abandoned agricultural structures, prisons, schools, religious buildings, closed or transferred military installations, transport infrastructures or old factories and warehouses engulfed by the growth of the city, in number in on which has not always absolute (fig. 28).
Even today, the belief that demolishing and rebuilding are cheaper and provide better results than re-using persists. However, in terms of carbon footprint this attitude is more than questionable. When in good condition, "these buildings are a resource [...] The reuse of existing buildings is in itself a Sustainable strategy in Preserving the embodied energy of the Existing fabric," according to British architects Buschow Henley, authors of some works of recycling grouped under the banner of *Adaptive Reuse*[14].

While many cities transform abandoned buildings into public facilities, reflection developed by our group went a step further encouraging a more widespread reuse into housing. Thus we presented a series of examples / ideas useful for reinhabitation of these buildings.
1- "To live anywhere": the house-studio by Pierre Chareau for the painter Robert Motherwell inside a military Quonset hut-type (Long Island, 1946) (fig. 29) or the mobile shelter designed by the athenian architect Aristide Antonas in a double-decker bus (2009) (fig. 30) are examples of how reusing could provide from ordinary material an attractive solution.
2- "Dwelling infrastructures": is what happens in many cities with a viaduct or any other comparable infrastructure. Examples such as Tokyo, Paris, Berlin and Evora in Portugal, to name but a few cases offer suggestive images (fig. 31). The viaduct provides structural stability, in addition to the roof and some walls, so "half house" is already made.
3- "Capsules": one of the most general feature of the abandoned industrial areas is the absence of partitions. It is well know the possibility of reusing them as Lofts. However, it is possible to ameliorate these empty spaces by capsules. Artistic interventions by Allan Wexler as The Crate House (1991) (fig. 32), are comparable to the portable rooms Nohotel, designed by Tobias Lehmann and Floris Schiferli (fig. 33). These capsules are similar to Sleepbox (2009) (fig. 34) by the architects A. Goryainov and M. Krymov, which are designed for stations and airports and which lead to think of a more intensive and sustainable use of industrial empty spaces.
4- "Mezzanine": a way to tap the excessive height of the industrial gaps is by means of mezzanines. In the exhibition we showed the so-called Naked House (2000) by Shigeru Ban, which though not a reused building illustrates the use of this distinctive feature (fig. 35).
5- "The car at the front door": another feature of industrial abandoned buildings is its strength. The proposed rehabilitation of the Fiat building in Turin, Lingotto (Giacomo Matte 'Trucco, 1915-23) by Richard Meier proposes that the 500 new homes can be accessible from the car, by using the ramp that goes up to the building rooftop (fig. 36). Something similar occurred in the recent conversion of a cold store of cod built in 1939 in Oporto into houses and stores (fig 37).
6- "Regulations": a usual problem in refurbishment operations is adapting the building according to existing regulations. In this sense we proposed two measures. On the one hand creating a "RH" sign the buildings subject to reinhabitation (in the same way as historic vehicles are marked with an H in Spain), so that they have to abide by their own regulations. Similarly, we proposed a procedure in order to guide intervention in an abandoned building, rather than determining the possible routes of intervention. The analysis of the compatibility between this support and the activity would be necessary. Only then can these buildings be successfully reactivated.

6th exhibition – episode 9 – House Move

Finally, the last exhibition "House Move"[15], which took the form of a short film[16], was a return to the essence of the concept reinhabiting, understanding that:
"*The move is a state of mind. When we move we take stock and inventory of the house, but also of our lives. That state of mind and the shape of wrapped furniture and objects, ready to move, are a promise –a project-, of colonizing the new house and, at the same time, of reorganizing the old one differently. To move is the most economical, easy and reversible of reinhabiting*"[17].
In the exhibition we invited to give a chance to our homes before moving, and to try to reinvent our domestic space by simply changing the displacement of its furniture. The furniture does a role in houses beyond use: selecting and placing the furniture we can turn a house into a home. The furniture shapes the architectural space as its walls or doors.

Final remark

One of the final remarks of our project refers precisely to the actual Spanish housing law. The law is often an impediment to refurbish our houses and is one of the reasons why many buildings are just turned down instead of being rehabilitated. If there is a consensus on the sustainability and the historic appropriateness of rehabilitation, there should also be a housing law flexible enough to allow new intervention strategies on existing dwelling buildings with a wider concept on habitability. If we associate flexibility to cultural and industrial buildings and not to housing it may be due to the rigidity of our housing law. For us, this is a mistake and a loss of opportunities for *Reinhabiting*.

Notes:

[1] Follow it on: http://www.habitar.upc.edu/2008/03/22/proyecto-rehabitar/

2 MURO, Ángel: *El Practicón. Tratado completo de cocina y aprovechamiento de sobras* (1894)

[3] See it on: http://www.habitar.upc.edu/2010/03/11/rehabitar-1/

[4] See it on: http://www.habitar.upc.edu/2010/04/11/rehabitar-2/

[5] See it on: http://www.habitar.upc.edu/2010/05/12/rehabitar-3/

[6] Follow it on: www.parkingday.org

[7] Follow them on: www.depave.org

[8] See it on: http://www.habitar.upc.edu/2010/05/13/rehabitar-4/

[9] See it on: http://www.habitar.upc.edu/2010/06/11/rehabitar-5/

[10] See it on: http://www.habitar.upc.edu/2010/07/11/rehabitar-6/

[11] Follow it on: http://www.habitar.upc.edu/2011/04/11/rehabitar-8/

[12] Pellicer, L.: “Barcelona acumula más de 820.000 metros cuadrados de oficinas vacías”. El País, January 19th 2011

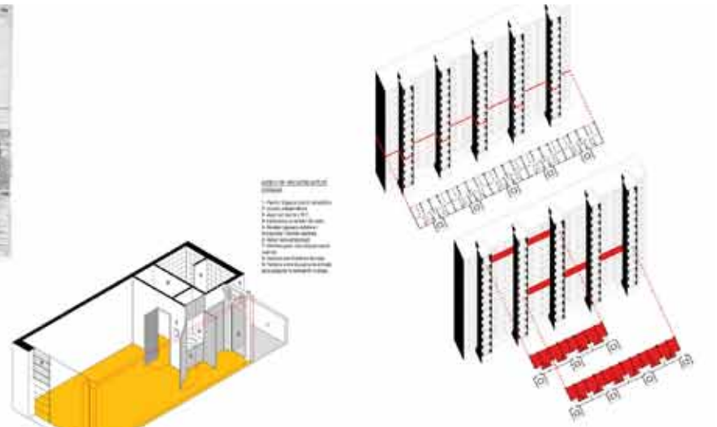
[13]Datos de 2008, publicados en Relea, F.: “Lisboa, la capital del vacío”. El País, August 1st 2010

[13]See it on: http://www.hhbr.co.uk

[14]Follow it on: http://www.habitar.upc.edu/2011/12/14/rehabitar-y9-mudanzas/

[15]See the film on: http://www.habitar.upc.edu/2012/02/27/mudanzas/

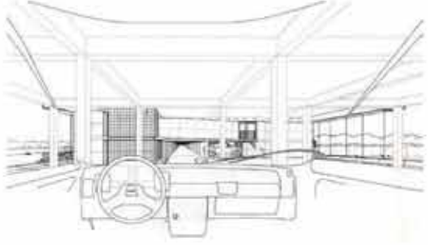
[16] From: http://www.habitar.upc.edu/2011/12/14/rehabitar-y9-mudanzas/








Karel Vandenhende
K.U. Leuven, Belgium

Do public housing companies design our cities like large houses and our houses like small cities?

0. Introduction and motivation.

Leon Battista Alberti introduced the analogy between different scales in his ten books (Alberti, 1452). His famous sentence has been picked up several times since then in architectural theory. One of the architects referring to Alberti was Aldo Van Eyck (Van Eyck, 1962), who proposed in the sixties to develop new cities based on a structural similarity on different scales. Recently, Peter Eisenman (Eisenman, 2008) quoted Alberti in his Six-Point Plan, referring with the analogy to a part-to-whole correspondence.
But besides our use of this similarity in architectural theory and criticism, do we use this comparison also in everyday practice?

1. Approach.

As a case study on analogy between scales, we want to investigate the links between two scales out of the more complete list 'house-street-neighbourhood-city'. Therefore, we examine the regulations of the public housing company VMSW. That is the Flemish Social Housing Company, which constitutes an external autonomous agency within the policy domain. The VMSW attempts to make social housing possible in Flanders, Belgium. Therefore they stimulate, support, supervise and finance local social housing stakeholders in order to realize and maintain affordable and high-quality housing projects. These stakeholders built entirely new streets, with sometimes several tens of houses and moreover, they also build the houses themselves. They operate on two scales at the same time: on the scale of a street, and on the scale of the house. In their support and supervision, the VMSW has for many decades now, built up and refined several tools. One of these tools is the C2008 (Lyben, 2008), which is in fact a long list of recommendations and regulations. And because of the embedding of the VMSW in government policy, and their tradition dating back tot 1919, they set an example in Flanders[1]. Comparing, in the C2008, the guidelines for the design of the street with the guidelines for the design of a house, enables us to verify wether these commissioners do consider the street as a large house and the house as a large street.

2. First reading: identical themes.

In a first reading, we list all the different themes in both sets of guidelines and highlight the analogies. But judging from these similarities in terminology, there seem to be astonishingly few parallels. We can detect only 'entrance', materialisation' and 'accessibility' as identical use of vocabulary.
Nevertheless, we feel intuitively that what Alberti stated is true. Namely that the various parts of the house can be considered as miniature buildings. (Alberti, 1452). Or in other words, that the bedrooms being the private entities on the scale of the house, are comparable to the houses themselves being the private entities on the scale of the street. Although not using the same vocabulary, a number of themes on one scale seem to be related to themes on the other scale.

3. Definition of 'scalesynonyms'.

To detect those hidden similarities, we define 'scalesynonyms'. These are synonyms, independent of scale. These more abstract descriptions can function as a link between the themes on the scale of the house, and the themes on the scale of the street. 'Context' for example always refers to a larger scale, regardless of what scale you consider, and 'detail' does the same for the smaller scale. With comparable degree of objectiveness, 'circulation' can refer to corridors and hallways in a house, or to the circulation in a street. 'Threshold' might be linguistically less abstract, but can also refer to other transitions than the edge between the house and the street. Especially since the attention of Van Eyck and Hertzberger (Hertzberger, 1982) for the transition space between various scales, 'threshold' might also refer to the border between the street and the rest of the city, and even to the edge between the private (bed)room and more communal family spaces in a house. 'Places' can refer to any scale, since Norberg-Schulz published 'Genius Loci' (Norberg-Schulz, 1979), which was in fact a photographic essay on places in architecture, but ranging from the scale of landscapes to the scale of details. 'Poché spaces' in solids, as mentioned by Venturi (Venturi, 1966), offer scale-independent names for the solids and the spaces contained in those solids. For example on the scale of the street, the houses are the solids which incorporate themselves other spaces. And on the scale of the house, the private rooms and other servant spaces function as solids that define the living spaces around them, incorporating space themselves. The poché spaces are comparable to the servant spaces as defined by Kahn (Kahn, 1974). Kahn distinguished 'servant' and 'served' spaces; the servant spaces being spaces that serve the others. Typical servant spaces on the scale of a house are stairwells, corridors, restrooms, storage space or mechanical rooms. On the scale of a street, the house serves the public space of the street. And finally, besides context, detail, threshold, place, poché, servant and served, also materialisation, flexibility and compactness can refer to concepts on the scale of the house, as well as on the scale of the street.

4. Second reading: analogies and differences.

In a second reading, we list all the different themes in both sets of guidelines again. But this time, we assign them also to our 'scalesynonyms'. Additionally, we measure the importance of each theme, by counting the lines of text for each of them.
The results of this procedure confirm our intuition, showing already many more analogies between both scales. But the comparison also brings up important differences. In the guidelines of the public housing company, some aspects only get attention on one of both scales. And some aspects that get full attention on one scale, with very specific guidelines not to be mistaken, are only briefly cited on the other scale, or they even get no attention at all.

5. Analogies and their value.

Using the 'scalesynonyms' in the second reading, makes already many more analogies visible. For example the importance of the quality of the served spaces is recognised on both scales. The same is true for the attention given to the number of servant spaces (or poché spaces) grouped together into one larger entity on a higher scale[2]. Besides, the quality of the served spaces and the number of entities of servant spaces, also durability, flexibility and compactness get similar attention on both scales. The finding of these similarities between the house and the street, doubles the importance of the involved guidelines. As if the repetition of a guideline on another scale, confirms that guideline a second time.
The similarity might also help to comprehend the involved guidelines. Looking at an issue from another, maybe more familiar angle, helps to interpret and comprehend the new information, making also new connections between different parts in your brain (Van den Heuvel, 2011). Or, as Ken Robinson puts it, new insights often become clear after seeing new connections, new links. (Robinson, 2009).

6. Differences and their opportunities.

The themes with differences in attention, bring up some opportunities for interesting questions, discussions and ideas.
In this paper, we give 3 examples: Should we consider houses like nests or should we design them like caves? Why do we organise houses along streets, and not along less corridor-like squares or courts? And should we foresee thresholds between the street and the neighbourhood, like we do between the house and the street?

6.a. Nests or caves?

On the scale of the neighbourhood, the VMSW emphasises the identity of the different places. The plan should respond to environmental characteristics, such as the building typology, major sight lines and green structure. And on the other hand, attention should be paid to the story and the iconography of the inhabitants; their expectations and sensitivities. In other words, the project should be in harmony with the context, and in harmony with the habitants. And designers should pay attention to the differentiation and variation of several places.
But on the scale of the house, there are no regulations concerning the identity of places. Why this difference? Apparently, it's the policy that the houses themselves should be neutral and common, so that every possible buyer or tenant can decorate the house according to his wishes, to nest himself in it.
What would be the consequences if we applied the logic of one scale to the other? For example, if we applied the same logic to the scale of the house, as we do to the scale of the street? Or in other words, if we designed our social houses and the different places inside the houses in the same way as we advise to design the places on the scale of the neighbourhood, each with its own identity, designed in harmony with the specific context and according to constraints of specific users. Then maybe, instead of neutral common houses, the houses would clearly differ from each other. They would become places that are linked to their context and linked to history, and would clearly be marked by the first owner or the tenant that the designer had in mind.
The architect Fujimoto (Fujimoto, 2009) defines the word 'locale' as a place for a person to inhabit. And he compares the nest with the cave, both as primal states of architecture. For the person or animal living in it, a nest can be described as a hospitably arranged 'functional place'. By contrast, a cave is there regardless of people. A nest is built in order to be inhabited, but a cave is merely there and a locale is discovered within its contours.
In addition to his comparison, we can add that a nest is temporarily. It can be identical everywhere, while the cave is by definition part of the context and its history. Using Fujimoto's vocabulary we might conclude as follows: can we exchange our 'nest-preference' on the scale of the house for a 'cave-preference'?
Or, as we can neutralise the differences between two scales using two possible directions, maybe the opposite matching should be examined? Which brings us to the alternative question: can we exchange our 'cave-preference' on the scale of the street for a 'nest-preference'?

6.b. Should we replace streets by squares or courts?

Concerning circulation spaces, the asymmetry in the C2008 of the VMSW is reversed. In the regulations concerning the houses, a lot of attention is paid to the proportions and dimensions of the different places. Minimal surfaces are listed and many examples of possible configurations for each kind of room are provided. Much notice is also reserved for the circulation areas. Pure circulation should be avoided in favor of a network of interconnected, well-proportioned places. But on the scale of the street, the VMSW apparently doesn't care wether the spaces in the streets themselves, where most of the houses are situated, will feel comfortable as a place, or if their dimensions and proportions will make them merely feel like pure circulation space. They only prescribe recommendations for the form and proportion of a special case of those streets, namely the squares and parks. The street as a tool to organise and give access to houses, remains unquestioned. But shouldn't we question the typology of the street? In the same way as we question corridors in a house? Or reversed: would we like to have a house full of corridors connecting only one or two places, instead of a house as a continuous connection of meaningful places?

6.c. Thresholds between the street and the neighbourhood?

The VMSW pays a lot of attention to the borders of the house. The transition from the street, or square, to the house must be designed gradually as to unite privacy with relations and views from the house on the street, in order to keep contact with its street.
But in contrast with this focus, almost no attention is paid to thresholds on the larger scale. And the same can be said for the smaller scale; between the street and the rest of the neighbourhood on the one hand, and between places within the house on the other. The reason for this lack of interest is hard to explain. The regulations do not justify themselves at this point.
It's clear that the threshold between the street and the city shouldn't be lockable as in the expensive fenced and locked access controlled suburbs for the rich and anxious. But learning from the similarity with the threshold between street and house, maybe a clearer definition of border and a more gradual transition from outside to inside might for example strengthen the ties between users in the street. In a comparable way, borders and thresholds between different places in the house, and between bedrooms and living areas in a house, could be questioned.

7. Conclusion and possible future research

Let's return to our initial question. Do public housing companies design our cities like large houses and our houses like small cities? Yes and no. Identifying identical themes in a first reading suggest they don't. But after defining 'scalesynonyms' and using them to identify analogies in a second reading, they seem to do so, unconsciously, and also in an incomplete manner.
Shouldn't these analogies be identified more consciously and more directly? Because that could be interesting for the users who, in that way, will come to a richer understanding of the recommendations. And in addition, using the analogies will show us some current gaps in these regulations. These lacks of analogy bring up a number of questions and topics for possible future research.

Notes:

[1] The VMSW (Flemish Social Housing Company) was established on July 1st 2006, within the framework of its general reorganization effort. The VMSW is an external autonomous agency possessing legal personality within the policy domain of the Town and Country Planning, Housing Policy and Immovable Heritage. The VMSW is the legal successor of the former Flemish Housing Company (VHM). The Flemish Housing Company was, in its turn, the legal successor of both the National Housing Company (NMH), established in 1919 and the housing division of the Nation Land Company (NLM), established in 1935.
[2] Besides this similarity in attention, both numbers also relate to the findings of Robin Dunbar. The regulations of the VMSW recommend a maximum of 25 houses on the scale of a square and up to a maximum of 5 private (bed)rooms on the scale of the house. Having families with an average of 2 parents and 2 children; the maximum of 25 houses makes about 100 people for each square. This is comparable to the 150 people that according to Dunbar (Dunbar, ...) can have a relationship with involving trust and obligation. Or in other words, a relation where there's some personal history, not just names and faces. On the scale of the house, the 5 private rooms, of which some can be occupied by 2 adults or 2 children, result in a maximum between 6 and 12 habitants for a house. This is identical to the number of possible close friends that we can manage according to Dunbar.

Bibliography

Alberti L.B., *De re aedificatoria On the art of Building* (Ten Books) 1452

Dunbar R., *The Social Brain Hypothesis*, in *Evolutionary Anthropology*, 1998, pp. 178-190

Eisenman P., *Six-Point Plan, keynote on the convention of the Royal Incorporation of Architects in Scotland*, Edinburgh, 2008

Fujimoto S., *Sou Fujimoto*, in 2G, n. 50, 2009

Hertzberger H., *Het openbare rijk, afdeling der Bouwkunde*, Delft, 1982

Kahn L.I., *Kahn on Beaux-Arts training*, in «The Architectural Review», n. 928, 1974

Lyben H., *C2008: Concepts for social housing*, VHM, Brussel, 2008

Norberg-Schulz C., *Genuis Loci, Toward a Phenomenology of Architecture*, Rizzoli, New York, 1979

Robinson K., *The Element: How Finding Your Passion Changes Everything*, Viking, New York, 2009

Van Eyck A., *Steps towards a configurative discipline*, in «Forum», 1962, no. 3, pp. 81-94. Reprint by Joan Ockman in *Architecture Culture 1943- 1968*, Columbia Books of Architecture, New York, 1993, pp. 348-360.

Van den Heuvel M., *The Connected Brain*, «Journal of Neuroscience», November 2, 2011

Venturi R., *Complexity en Contradiction in Architecture*, MOMA, New York, 1966, p 80

Legenda

Image up: Small front garden and exterior semi-public staircase as thresholds between houses and the street. Renovation of 12 appartments for the VMSW in Gent, Belgium. Architect Karel Vandenhende.

Image down: List of all the different themes in both sets of guidelines, assigned to ‘scalesynonyms’, with counted lines of text for each of them as a measurement of their importance.

Themes and scalesynonyms (#: quantity of lines of text that are dedicated to each theme)						
		#	SCALE OF THE STREET	#	SCALE OF THE HOUSE	SCALESYNONYM
First reading: identical vocabulary						
		8	entrance neighbourhood	6	entrance house	entrance
		9	accessibility neighbourhood	16	accessibility house	accessibility
		10	choice of materials	6	materialisation	materialisation
Second reading:						
	Analogies:					
		14	squares as spaces to stay	12	living area in the house	quality of served places
		3	amount of grouped houses	7	quantity of bedrooms	number of servant spaces
		7	density	16	plan efficiency and energy control	compactness
		29	multiple use	39	adaptability	flexibility
	Differences:					
		a. Nests or caves?				
		21	surroundings	1	building site	context
		4	habitants along the street	0		detail
		75	network of green and play areas etc.	4	indoor and outdoor private spaces	diversity of served places
		b. Streets or squares?				
		0		20	minimalisation of circulation	circulation
		3	proportions of squares	54	minimal surfaces	minimal surfaces for places
		c. Thresholds?				
		46	threshold between public and privat	2	edge between day and night	treshold between scales
		14	borderss between spaces	0		inner threshold

Peter L. Wong
UNC Charlotte, U.S.

Chinese Puzzle: a tangle of space in Shanghai's *Shikumen* architecture

Significance of the Shikumen and Its Critical Role in Urban Shanghai

Working one's way through research and popular literature on Shanghai *shikumen* and *lilong* neighborhoods leaves one with an appreciation of the rich and varied history of this urban and architectural type. Books of lilong photography by noted artists can be found in most Shanghai bookstores. Chinese literati feature lilong neighborhoods as curious settings in novels and detective stories. Filmmakers seek views of Shanghai life in these houses, portraying family relationships and/or political intrigues that well suit the chaos and density of their weathered environs.

Chinese students visit these neighborhoods as a reminder of the fading and forgotten city past. They are invited to take up residence for a night to experience firsthand the layers of life and history these houses contain.

By contrast, developers see the *lilong* neighborhood as a cultural condition that can be marketed to consumers and enlightened travelers. Bewildered by this new economic model, local residents are at odds as to why such dilapidated conditions might be attractive to elite shoppers and the well-to-do[1].

Lilong and *shikumen* neighborhoods thus play an important role in the past and future image of the city. This paper inquires into potential methodologies that may better inform this urban practice.

A Brief Account of the Persistence of Shikumen Architecture

Shikumen dwellings, most of which were built between 1870 and 1940, contributed greatly to the shape and planning of Shanghai as well as its urban life. Known as "lane housing" (*lilong* or *longtang*) or "stone-gate-door" (*shi-ku-men*) dwellings, they marked the rise of Shanghai as a modern industrial city.

The first *shikumen* were built in the British, American, and French Concessions created after the First Opium War (the 1842 *Treaty of Nanking*), when foreign interests were allowed complete and long-term control of Shanghai districts for business purposes and the building of residential settlements.[2] At first these blocks were developed for international residents. But developers but soon realized that foreigners alone could not completely fill the districts. This led to negotiations with local government for housing a migrant Chinese population that was moving into the city to take up in factory and other work (Fig. 1).

Building began in the 1870s, based on a Western model of worker housing. But builders also capitalized on local building traditions, inexpensive labor and regional construction methods. *Early-shikumen* (1870-1910) versions were constructed as 5-bay or 3-bay, similar to the rural country houses of Anhui Province. *Late-shikumen* (1910-30) architecture was characterized by a two or one-and-a-half bay module to create an even denser housing grain. Finally, the *lilong* house (1910-30) paralleled *late-shikumen* architecture but was constructed primarily of masonry and concrete, reflecting more modern building techniques. By the 1930s *lilong* houses could be found in both attached and detached forms. Variations were rich and the type was often recreated in grandiose as well as humble versions according to the class and income of the homeowner. By the 1940s lilong housing and its neighborhoods comprised more than 50% of the urban fabric in Shanghai (Fig. 2).

In the 1930s it was common practice to lease rooms in the service areas to the north to students, artists, literati, etc. The kitchen was typically shared, and often the original layout of the houses was altered to accommodate the additional residents. After the Communist revolution of 1949, *shikumen* structures were subject to additional densification in which four to nine families living in one house were common. This could result in as many as twenty or more people living in a single house.

The transformation we see in Shanghai today thus continues to combine politics, foreign interests and the lives of local residents, extending the *shikumen's* historical themes of development, economics, architectural morphology, globalism, and cultural diversity.

Social Interaction as Side A Meets Side B

The layout of *lilong* neighborhoods placed public interior spaces to the south and service areas of the residential program to the north. This arrangement of south-to-north distribution of the spaces provided the fundamental arrangement that served as the basic patterning of the lane, sub-lanes, and entirety of the urban block. Hence most of the major streets running east west in the city served as the entrance points into these settlements (Fig. 3).

The narrow lanes of the settlement encouraged public interaction. These pathways were designed for the pedestrian, allowing for walking, sitting and play. Alleys branching off the main lane became even more intimate with residents cooking, washing clothes and/or engaged in conversation with neighbors. House orientation to the alley reveals the secrets of the rich social conditions inherent in all *lilong* settlements. Unlike Western street arrangements that orient house fronts that face one another in double-loaded corridor fashion, *lilong* houses are oriented along a directional grain where the most public elements of the house generally face to the south.[3] Therefore, residents leaving the formal side of their dwellings have the opportunity of encountering the rear (kitchen-side) of the house across the alley.

This mismatched layout allows for a myriad of different social scenarios. A resident returning from work in the afternoon by way of her front door may encounter a neighbor washing vegetables in the alley. Children playing cards or Chinese chess may be in the alley as the mail carrier arrives with packages. Or freshly washed clothes might be dripping from the rear of a house as a grandmother across the alley lounges in her stone gate courtyard (Fig. 4).

Not all social scenarios supported by the shikumen type were positive however. The overcrowding of these neighborhoods often led to a need for privacy in the most unusual ways. For example, it wasn't uncommon for people to spill into the streets of Shanghai in search of privacy in public places. Courting couples often sought areas like The Bund, mixing with strangers as an escape from family members and prying neighbors. Yet *lilong* life promoted a rich opportunity for a particular type of social life that is often lost in contemporary high-rise architecture.

Reuse of the Shikumen Type Today

Architects and developers have recognized the importance of resurrecting lilong morphology by either borrowing or recreating its urban character. The relatively recent developments of *Xintandi* or *Tangzifang* in Shanghai serve as prominent examples. However, such projects focus on the commercial success of shopping districts for the more Internationally affluent, and seldom address the more common and social atmosphere of the original *lilong* settlements.[4]

Several new projects to restore and reinterpret shikumen form are currently being erected in Shanghai. Of note is the *Jian Yeli Project* now being completed in the French Concession by the American firm of John Portman Associates, the City of Shanghai, and a private developer. One third of the site's former *lilong* neighborhood has been demolished, another portion of the project has remained in its current condition, and the final part has been renovated by Kokai Studios (Fig. 5).

Kokai Studios' reuse of the existing portion of the site respects the original property lines of the single bay type. All living spaces and service elements are distributed with respect to the building's historic pattern. Accommodations for modern conveniences such as bathrooms, heating and cooling have been placed to maintain the original spatial character of the houses.

The Modernization of Shikumen Space: Life Up and Through the Section

As previously noted, the development of *Shikumen* architectural form was founded on the confluence between Anglo-urban row housing and rural vernacular housing of the Anhui Provence. Arising out of these Western and Eastern influences is a complex puzzle of spaces both interior and exterior that serves as an argument for a more organic strategy for architectural modernization.

Adolf Loos, the turn of the 20th century Viennese architect and social critic, held up improvements in British living and sanitation standards as a model of modernization for the Austrian architecture in the 1890s. He argued that the efficiency of British and American domestic building practice could improve the substandard conditions of Germanic industrial production. Like Hermann Muthesius in his study of the English country house, Loos attributed modern living to the way basic functions of everyday life could be improved by artisan responses to innovation, change, and modernization brought about by incremental changes in domestic lifestyles.[5] The English craft tradition and its championing of vernacular solutions was one model which Loos viewed as an agent to modernization.[6]

Similarly, local labor under the direction of developers and contractors in the 1910s, 20s and 30s gave rise to regional adjustments in *shikumen* building practices, techniques, and the fitting-out of dwellings that were better suited to the rapidly changing needs of urban Shanghai. For example, "horse-head" masonry dividing walls between homes made their way into *shikumen* construction as a regional response to the need for fire protection (Fig. 6).

Though this paper doesn't claim that Loos had knowledge of the Shanghai development of lilong architecture, the idea that the same elements of internationalization (in Loos's case, modernization of Viennese architecture via British models) provides an interesting point of reference regarding the shape, form and development of the complex internal structure of the *lilong*.

Of specific interest to this research is the spatial dynamic of the *shikumen* type, given its varying interior and exterior qualities. Like a wood puzzle, the core of the shikumen experience in both its original and modified forms is a tangle of risers, landings, handrails, swinging doors and screens. On a human plane this knot–like interior space – particularly around the stair – is a vertical vortex of moving bodies, ascending and descending, going about routine and daily activities, and presented in a performance of movement that the static condition of the architecture alone lacks. In this sense, we might argue that architecture is always moving as we make our way through space, led by corridors, stairs, and even furniture, carpets, and objects that lie in our field of view as we find our way (Fig. 7).

In an essay written in 1952, Luigi Moretti argued that "empty space" in buildings, in contrast to its constructive and material qualities, is central to understanding the nascent and full impact of the architectural experience.[7] In making this claim for the complementarity between space and object, Moretti relies on a kinetic idea of space as vessel that not only contains, but houses dynamic elements that alter our interpretation and use of the spatial realm by virtue of movements, compressions, entries, and exits. He assigned four principles upon which we might judge the effectiveness of the spatial interior: (1) *dimension*, or the physical quantity of the absolute volume, (2) *density*, the perceived effects based on the quantity of light entering a spatial volume, (3) *pressure or energetic charge*, pertaining to the relative ways that various points in space are influenced by the bounding enclosure, and (4) *quality*, which he described as analogous to the fluidity of space embodying energies that are restricted or released as they move freely within the interior.

Shikumen stairs can be seen as an example of Moretti's notion of "empty space" by way of its historical development. This can be witnessed through use over time, as stairs transform from one to multiple activities through changes in physical character, placement in the building, and the living patterns of the Shanghainese. In early, grand versions of the house, the stair was a vertical service hall buried in the body of the building so that servants' activities and private matters of the house could remain hidden behind the more formal business of the living areas. Before the introduction of the bathroom in the 1920s, the stair and landings were used to situate chamber pots, set just outside bedroom doors after use, well away from cooking and eating areas. One can imagine the olfactory dimension of the space expanding Moretti's idea of "quality" now interpreted through the presence of hanging or wafting air (Fig. 8).

As owners begin to lease rooms, as well as entire floors, in the 1930s and 40s, the stair gained new importance as the formal entry to the various flats above. Hence, the functional plan of the house was "driven in reverse" as residents entered or exited the building more often at the north face of the house. This forced the stair to function more as a public foyer for the flows of people in a very different way than its original use as a single-family structure. As a result, the "pressure" of the space, if we define it on Moretti's terms, is dramatically altered. We venture to interpret that the new "energetic charge" of the space is also altered as individuals moving up or down the stair as a public passage. Such a reading of pressurized space might be synchronized, those in the morning moving to and from the common kitchen, preparing breakfast, or making small talk in the confines of the space. Or the scenarios might be less predicable, such as late evening coming and goings by the elderly or lovers. The choreography of the shikumen stair becomes more dynamic with people climbing or descending through space under different motivations changing the flow of forces and therefore the life of the stair.

Ang Lee, the noted filmmaker and director captures the changing role of the *shikumen* stair in his film Lust, Caution. The film's setting in the late-1930s parallels the time in which the function of the stair is changing from a service element to public passage. As Lee's protagonist enters her *shikumen* from the public lane we are led through a series of filmic cuts that follows her up and through the section of the house, introducing its variety of spaces as well as the residents who dwell there. Stepping through a narrow door, the character is in a dark kitchen, greeted by a man washing his face at a sink while sneaking glances through a window into the brightly lit lane. She moves through this room, avoiding a mother with a baby descending a stair while simultaneously watching a woman in prayer in a distant hall. The camera cuts to a skewed, nose-dive perspective of the actor climbing the first run, following her as she switches back at the landing. At this position she looks up and utters good "morning" to a passing woman. And as the camera levels out, following the actress's hand as she slides it along the rail, we refocus on a distant view through an interior window of a family of four seated at a table engaged in a meal or perhaps card play. The entire sequence, no more than 20 seconds in length, allows a complex and comprehensive view of *shikumen space* collected by the stair.[8]

We could view this sequence as a corollary that brings to focus an understanding of Moretti's theorem. The transformation of the stair from private hall to public passage demonstrates the nature of "empty space" as architecture accommodates one situation and then another. Moretti's metaphorical use of fluids, energy and atmosphere is useful for us as critics, researchers and designers through its creation of a more complete understanding of how such characterizations might lead to significant and long lasting effects.

Given these spatial qualities the *shikumen* space of the stair is a knot that binds separate flats – now a common circumstance in lilong neighborhoods. At the same time, as a purely formal reading, these platforms between stairs – i.e., the landings – expand as threads that stretch to the edges of the envelope. In contrast, we might imagine there are no landings in these houses whatsoever, only truncated stair sections reaching to branching floors domains. The notion of the "free section" comes to mind, recalling Colin Rowe's insightful analysis of Villa Garches.[9] But things are seldom "free" when it comes to sectional demands, human scale, and gravity loads of a building. What can best be taken from the spatial excitement of the Shanghai *shikumen* morphology is the potential for life to adapt to the memorable moments of spatial clarity.

Peter L. Wong
UNC Charlotte, U.S.

Shikumen architecture, in a profound way, has arisen to meet the inherent changes in the cultural, political, and economic conditions of Shanghai. Some critics may see present-day changes in its form as a loss of a significant historical type, while others may view it as an obstacle to new forms of development and economic potential. Suspending these notions by understanding the puzzle-like nature of *shikumen* architecture and space is a more moderate position to take, leading us to further clues and research that may lead us to a revision of the type in both its elite as well as humble versions.

Notes

[1] The noted fiction author, Qiu Xiaolong, in his novel, *When Red is Black* (New York: Soho Press, 2004) describes this type of development in an exchange between the protagonist of his detective story and a municipal real estate official. The conversation outlines the plans for a shopping area that ironically anticipates the success of Shanghai's Xintandi commercial district.

[2] Article No. 2 of *The Treaty of Nanking*, signed August 29, 1842, states specifically the conditions of the concessions in Shanghai and in three additional Chinese towns.

[3] This orientation to the alley has its roots in *Feng Shui* planning that follows closely ancient Chinese philosophy, where the relative position to sun, water, mountains and wind play as important factors to the siting of architecture and town.

[4] Since the commercial success of the Xintandi shopping and tourist district by Ben Wood's office, Studio Shanghai, the architect/developer has also created interest in building similar developments, such as: *Waitanyuan and Cambridge Watertown* in Shanghai as well as the new *Xihutandi* shopping area in Hangzhou.

[5] Hermann Muthesius, *Das englische Haus* (Berlin: Auflage, 1904/5). English language version published by London: Frances Lincoln, 2007.

[6] Adolf Loos, "Architecture 1910," trans. H. F. Mallgrave, Midgård Journal of Architectural Theory and Criticism, Vol. 1, No. 1, 1987, 49-56.

[7] Luigi Moretti, "The Structure and Sequences of Spaces," Spazio, 1952-53, No. 7. English translation by Thomas Stevens in Oppositions 4, October 1974, 124.

[8] Ang Lee based this film on a 1979 story by writer Eileen Chang of the same title. The sequence features architecture as much as the movie's characters in such a way that creates tension in the plot as the director recounts the story of the heroine, a young actress named Chi who is scheming to execute a Chinese spy who is collaborating with the Imperial Japanese Army at the beginning of Shanghai's occupation in 1937.

[9] Colin Rowe, "Mathematics of the Idea Villa," *Mathematics of the Ideal Villa and Other Essays* (Cambridge, MA: MIT Press, 1987), 11.

Bibliography

Chao Wei, *Shanghai Housing After Its Opening to Foreigners* (Beijing: China Architecture and Building, 1991).

Lu Hanchao, *Beyond the Neon Light: Everyday Shanghai in the Early Twentieth Century* (Berkeley: University of California Press, 1999).

Samuel Y. Liang, "Where Courtyard Meets the Street: Spatial Culture of the Li Neighborhoods, Shanghai, 1870-1900," Journal of the Society of Architectural Historians, Vol. 67, No. 4, December 2008, 482-503.

John E. Orchard, "Shanghai," The Geographical Review, Vol. 26, No. 1, January 1936, 1-31.

Shen Hua, *Shanghai Lilong Housing* (Shanghai: Chinese Architectural Industry, 1987).

Wang, Shaozhou, *Shanghai Modern Architecture* (Jiangsu: Jiangsu Science and Technology, 1989).

Yu Wenming, *Shanghai Shikumen* (Shanghai: Shanghai People's Fine Arts, 2012).

Zhao Chunlan, "From Shikumen to new-style: a re-reading of Lilong housing in modern Shanghai," The Journal of Architecture, Vol. 9, Spring 2004, 49-76.

Legenda

Figure 1: Establishment and expansion of foreign settlements in Shanghai (source: Lu Hanchao, 1999).

Figure 2: Early-shikumen, Zhaofuli neighborhood, Shanghai, 1914 (source: Shen Hua, 1987).

Figure 3: Diagram of lilong lanes and alleys (source: Author).

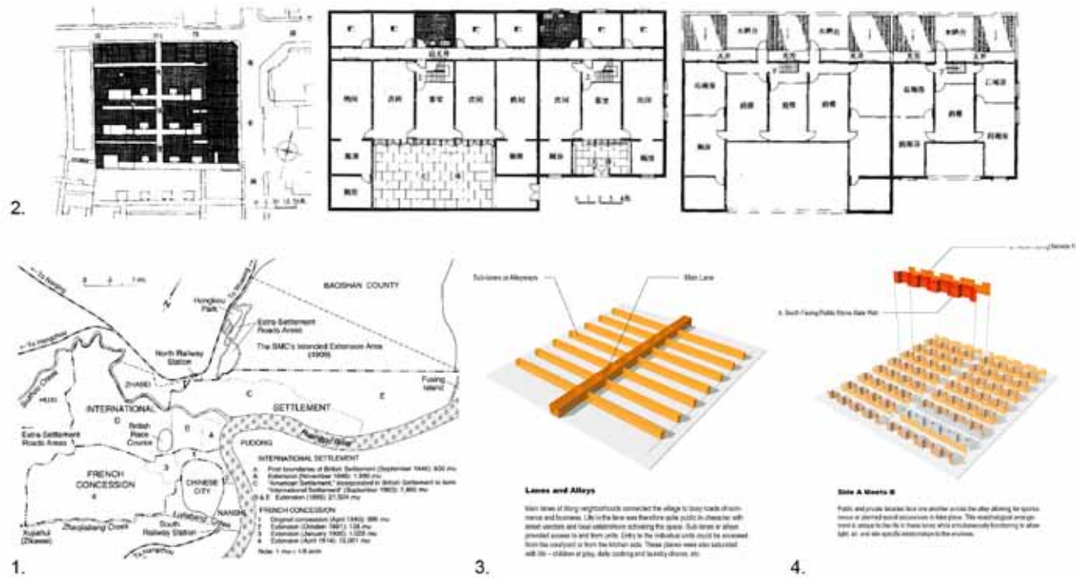
Figure 4: Diagram of alley facades A and B (source: Author).

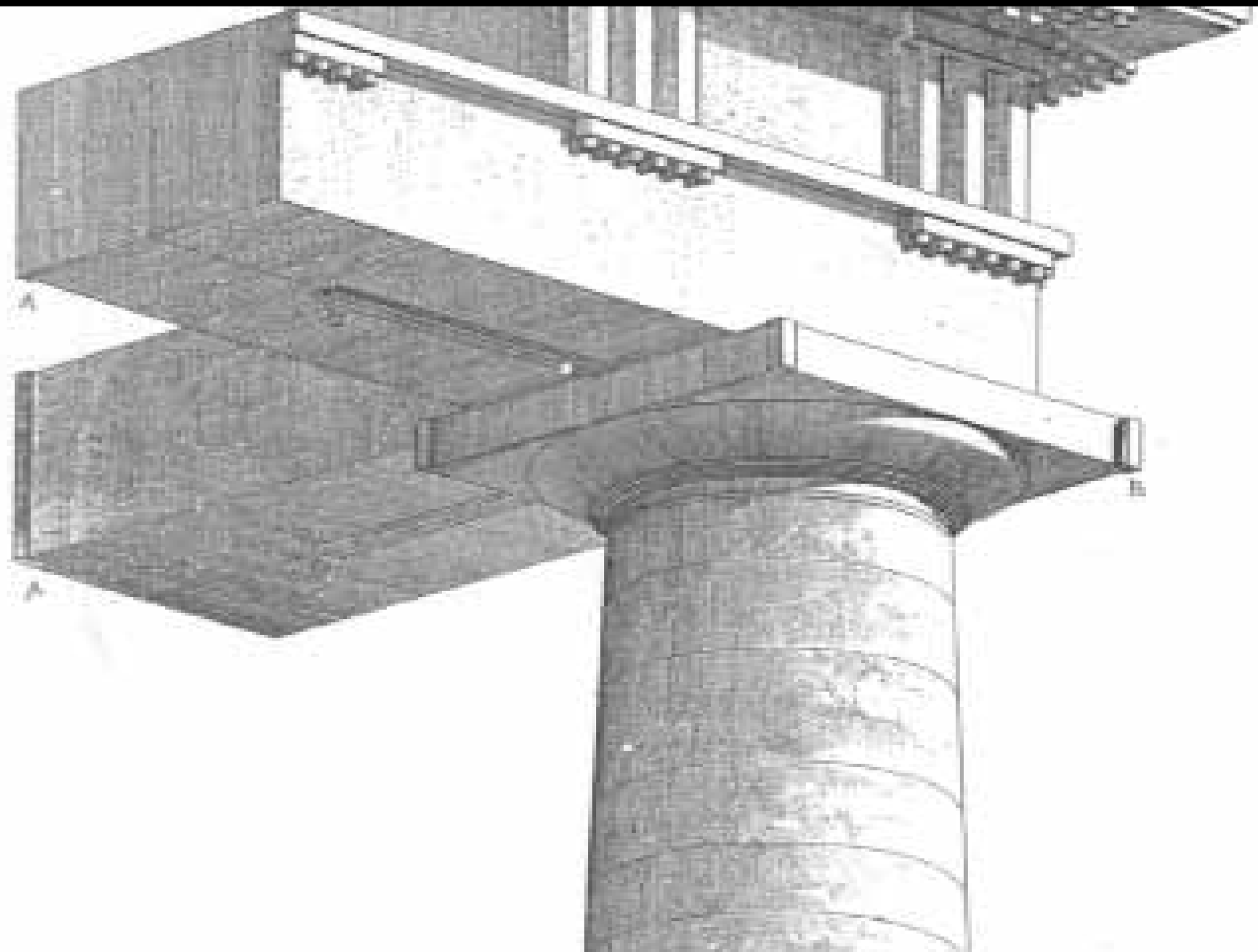
Figure 5: Existing shikumen restoration by Kokai Studios, 2012 (source: Author).

Figure 6: Diagrammatic model of a late-shikumen house (source: Author).

Figure 7: Diagram of the distribution of spatial volumes (source: Author).

Figure 8: Diagram of staggered floor levels (source: Author).





Summary / Theme 5

Laëtitia Arantes - Olivier Baverel - Daniel Quenard
CSTB Grenoble, France

A morpho-energetic optimization tool for a low energy and density reasoned city area

Abstract

This paper describes a "morpho-energetic" study that analyses the morphology of low energy and dense city areas. Nowadays, many French urban planners recommend dense and compact cities to suit the imperatives of sustainable development. Usually dense cities are said to be low energy and land saving contrary to spread cities. In the last twenty years, many studies showed that a building's compactness can impact its heating loads: the more compact a building is, the less its heating consumption is. But, this "morpho-energetic" relation is less obvious at the urban scale since cities' forms and morphologies are complex. Thus a question remains: are compact cities really sustainable and low energy? The study we present in the paper below follows a previous research, which focuses on a simple calculation method to consider the whole energy balance in the design of residential buildings (Arantes *et al.*, 2010). Here, this simplified energy calculation method is implemented as a chunk of code in an urban optimization tool relating three parameters: population density, energy performance and sun penetration. If considering production goals, the layout of urban grouped buildings introduces a shading issue for consideration. Maximizing energy production in urban environments requires the minimization of sun shading. By optimizing population density, the tool proposes to find the optimal building layout in a city area from sun shading and energy performance criteria. The optimization is accomplished with the genetic algorithm tool Bianca, developed by Paolo Vannucci, Angela Vincenti and Marco Montemurro at the French Institute Jean Le Rond d'Alembert (Vincenti et al., 2010). Our ultimate goal in the development of the tool is to find the optimal form(s) of a low energy and dense city area.

1. Introduction

In the last twenty years, many studies showed a link between buildings compactness and heating loads. The more compact a building is, the less its heating needs are. At the urban scale, this "morpho-energetic" relation is less obvious. City forms and morphologies are complex. The study we present in the paper below emphases on urban morphologies and layouts. It follows an earlier research, which focused on a simple calculation method to quickly approximate the whole energy balance of residential buildings. The whole energy-balance approach takes into account the entire energy consumption and gain of the residential building. Energy consumption includes everything from heating to electricity for appliances, as well as energy for hot water. In this model, the embodied energy of materials is also included as energy consumption. Passive gains from sun, metabolism activities and appliances are also buried in the entire energy balance. Finally, the model also evaluates the active energy production made possible by photovoltaic and thermal panels as an energy gain of the overall system (Arantes *et al.*, 2010). Here, this simplified energy calculation method is applied at an urban scale. It aims to find the optimal form(s) of a low energy and dense city area. In urban environments, the layout of grouped buildings requires that sun shading must be reduced. Thus the new urban modelling tool we are developing proposes to find the optimal building layout in an area of a city (addressing size, position and orientation) by correlating the population density with respect to sun penetration and energy performance criteria. The optimization is accomplished with the genetic algorithm tool *Bianca*, developed by Paolo Vannucci, Angela Vincenti and Marco Montemurro at the French Institute Jean Le Rond d'Alembert (Vincenti et al. 2010). Through the development and application of this tool, we aim to assess the link between city form and energy efficiency.

2. City morphologies and energy: literature review

Research analyzing link between urban form and energy use has been the topic of many publications. They relate to three main topics: city and transportation energy use, building energy and urban geometry, and city and solar production capacity.
With respect to city and transportation energy use, P. Newman and J. Kenworthy achieved an analysis of 32 cities across North America, Asia, Australia and Europe. They showed that energy use for fuel is closely tied to urban density. More especially, the denser a city is, the higher its fuel consumption is. For instance, dense Asian cities have lower car use and thus lower energy consumption for transport than sprawled American cities (Newman and Kenworthy, 1988). The correlation between population density and transport energy has sustained research since 1988 (Gordon and Richardson, 1989; Gomez-Ibanez, 1991; Kirwan, 1992; Fouchier, 1998; Bertaud and Malpezzi, 2003). Today, it continues to foster debate by including new energy stakes such as renewable energy and more precisely electricity production through photovoltaic panels (Ménard, 2010; O'Brien *et al.*, 2010).
The impact of urban geometry on building energy consumption is the focus of a second category of research relating to urban energy efficiency. In 2005, (Ratti *et al.*, 2005) suggested that urban geometry creates a twofold variation of building energy consumption. In 2010, (Salat and Nowacki, 2010) showed that for lighting and for thermal comfort energy, low-rise urban blocks of traditional European cities are more energy efficient by a factor of at least four than recent Chinese cities with isolated tower blocks.

Gradually, research has turned to the development of more complex urban models to analyze correlations between form and energy use. Some researches deal with solar production capacity as it relates to urban forms. Designing cities for solar access is not a new approach. In the twelfth century CE, the Pueblo Indians built their Acoma settlement according to solar access laws. In the settlement, terraced houses face south to capture the winter sunlight. Moreover, they are protected from summer overheating by the roof terraces. In the nineteenth century, (Knowles, 1981) referred to the Acoma Pueblo in the development of his *Solar Envelope* concept. In Knowles method, a three dimensional volume constrains development within a site to ensure adjacent neighbors have a minimum direct solar access for a specified amount of time per day throughout the year. The *Solar Envelope* has been the topic of many studies (Littlefair, 1998; Capeluto and Shaviv, 2001; Knowles, 2003; Niemasz *et al.*, 2011). In 2004, (Robinson and Stone, 2004) described three alternative methods to account for sky obstruction and to model solar radiation in the urban context utilizing the ray-tracing program *Radiance*. The analysis of the link between urban form, density and solar potential thus continues to be the subject of study (Cheng *et al.*, 2006; Kämpf and Robinson, 2010).
In describing a tool that aims to model energy and density correlation in urban areas, our paper expands upon these previous researches.

3. Optimization protocol

Our tool uses a genetic algorithm to optimize the layout of buildings within a city area with respect to energy performance, density and solar penetration criteria. Many factors affect city energy consumption including building form, size, and layout. Additionally, sun shading impacts the efficiency of photovoltaic solar panels (Hanitsch, 2001). As a result, direct solar access is also a factor in determining overall city energy consumption.

3.1. Description of the problem

This study focuses on an isolated city area that is not part of a larger urban context. Figure 1 illustrates the urban layout problem: nbat buildings $B_{i,j}$ are laid out according to a rectangular weft that represents the city area[1]. The buildings are located thanks to coordinate values $ax_{i,j}$ and $by_{i,j}$ relative to the nodes of the weft. The buildings are spaced at dmxi-meters intervals on the horizontal axis and at dmy_j-meters intervals on the vertical axis. They are different in height $n_{i,j}$ and length $L_{i,j}$.Their orientation from the South axis is $\alpha_{i,j}$. The data to be optimized is the dimensions of the buildings (ni,j, and Li,j), their relative positions ($ax_{i,j}$ and $by_{i,j}$), their orientations $\alpha_{i,j}$, and their relative spacing intervals (dmx_i and dmy_j).
The user chooses objectives and constraints among three criteria: density (*eg.* maximize the urban population density), energy use (only consumption items) or balance (with active solar gains), and solar shading (eg. number of shaded stories in a building during six hours per day throughout the year). When defining an objective, the user has to choose to *minimize or maximize* relative to the selected criteria. When defining a constraint, he or she has to define a limit threshold. We can note that the tool only considers single-objective optimization problems. However a single- or multiple-constraints can be assigned. The tool can also be used without constraint.

3.2. Optimization stages

The optimization problem is solved through the use of a genetic algorithm tool called Bianca developed by Paolo Vannucci *et al*. at the French Institute Jean Le Rond d'Alembert (Montemurro et al., 2011). Three other tools are used: *Fortran* (FORmula TRANslator) as programming language (Backus et al., 1957), Microsoft Excel as a user interface and *Rhinoceros*® (with the *Grasshopper* plugin) to visualize the optimized urban form. Figure 2 documents the workflow of the optimization process.
(1) In a first step, the user enters the necessary data into an *Excel* spreadsheet. Data parameters are relative to the buildings characteristics (materials, equipment, envelope thermal efficiency, etc.) and to the optimization inputs (number of buildings *nbat*, objective function, constraints, etc.). An Excel macro registers the entered data into a series of *.txt* files that are read by our *Fortran* program.

(2) In a second step, *Bianca* is run to optimize the input data according to the chosen objective and constraints. *Bianca* is a genetic algorithm based solver for combinatorial optimization problems in engineering. It was developed for the design of composite laminates (Ahmadian et al., 2011). It runs within a *command-line interface* and uses *Fortran* as its formal language. A subroutine defines optimization fitness in the Fortran environment and details the calculation stages. The optimization is then run according to a genetic algorithm. A genetic algorithm is a solver that mimics Darwin's process of natural selection. It encodes candidate solutions to a search problem and evolves toward better solutions. This process results in the Pareto front of optimized solutions for the considered problem.

(3) The optimization process resulted in a .bio file that synthesizes data about the best feasible solution for each generation. The data includes every optimized parameter: the buildings characteristics (number of levels $n_{i,j}$ length $L_{i,j}$ and orientations $\alpha_{i,j}$), their relative positions ($ax_{i,j}$ and $by_{i,j}$) and the spacing intervals (dmx_i and dmy_j). Data results also indicate the value of the objective function - *ie* the density, energy or shading efficiency of the "optimized" city area.
(4) These data are then processed in an *Excel* sheet.
(5) After data processing in the *Excel* sheet, a three-dimensional visualization of the best feasible solution is rendered to the active *Rhinoceros*® window utilizing a *Grasshopper* Read XL *Ghuser* object.

3.3. A preliminary tool at building scale

The optimization tool described in this paper uses an energy assessment tool. This tool was developed during an earlier research, which focused on a simple calculation method to quickly approximate the whole energy balance of residential buildings. For this study, the basic building has a simple plane-parallel form. Amongst the three building's dimensions, the depth *p* is fixed to twelve meters, so that the central part of the building is illuminated with daylight. The length *L* and the height *h* are the output variable parameters. The height h depends on the number of levels *n.* The average floor-to-ceiling height is 2.8 meters. For optimal daylight comfort, the window-to-floor area ratio is around 17%, which is the minimal ratio imposed by the French energy policy (CSTB, 2007).

The energy assessment tool draws up the monthly energy balance of a building in the case of a Grenoble climate. It includes its gains (passive and active sun gains and in-house gains due to appliance utilization and metabolic activities), its loads and also the storage phenomenon, during both the construction (embodied energy) and the use of a building (heating, cooling, lighting, auxiliary power unit electricity, hot water, appliance electricity and elevators electricity). To improve its energy balance, the building supports photovoltaic panels that produce electricity, and thermal panels that produce thermal energy. Active panels are vertically and horizontally installed on the South front and on the roof of the building (Arantes *et al.*, 2011).

4. Preliminary results and discussion

At the time, several urban optimizations are in process. Each one includes 2 000 generations. The problem resolution takes between 120 and 170 hours. As a consequence, only a few results are available at this time. In this section, we deal with a result whose energy criteria relates to the 2005 French energy policy (CSTB, 2007).

4.1. Optimization parameters

The bound values of the optimization parameters are detailed in Table 1. The city area contains 20 buildings (*cf.* Figure 1). The buildings all have the same orientation from the South axis $\alpha_{i,j}$. In this first case, the layout is regular and the buildings are placed on the weft nodes ($ax_{i,j} = 0$ and $by_{i,j} = 0$).

4.2. Optimization criteria

The optimization criteria are the following. In each case, maximizing the population density is the objective. The first constraint is the maximum shade height between 11 am and 1 pm in December; 10 am and 2 pm in January, February, October and November; and 9 am and 3 pm in the remaining months. This threshold is set equal to 2 levels. By introducing this shade limit threshold, we tolerate some casted shade on the buildings so that the inhabitants could find shaded areas in the district. This could especially reduce summer overheating.
For the first study, the energy constraint relates to the maximum building energy consumption regarding the French energy policy. Energy consumption includes heating, cooling, lighting, hot water and auxiliary power unit electricity. It also includes passive gains from sun, appliances and metabolism activities. No active gains (thanks to thermal and photovoltaic panels) are taken into account. The limit threshold is set equal to 130 $kWh_{pe}/m^2SHON.year^2$. This value is defined from the 2005 French energy policy in the Grenoble region (CSTB, 2007).

4.3. Discussion of results

Figure 3 shows the curve of the best feasible solution versus generation. The best solution is reached at generation 1609. The population density is arount 318 inhabitants per hectare, which matches highest densities. Indeed, the most densely populated cities in the world have equivalent population density (Demographia, 2011). In the last generations, the best feasible solution evolves around this value.
Figure 4 is a perspective views of the best feasible urban solution into the active Rhinoceros® window. It shows that the optimization tool results in high and long-spread buildings facing South to reach high densities while complying with the French 2005 energy policy. More precisely, there are very few small buildings and no single house within the city area. 65% of the buildings are more than 20 levels in height (ie 60 meters). There are four mid-level buildings (between 14 and 23 levels). The last three ones are 2-storey buildings that are six meters high. Moreover no building is less long than 20 meters. The buildings lengths are spread between 24 and 59 meters. Around a half of the buildings is longer than 50 meters. Lastly, the buildings all face south to capture passive sun gains and to reduce their heating needs. Thus, this city area is made up with compact apartment blocks: there is no single house and each building includes several dwellings. However, the urban area is quite spread out. It covers almost 46 hectares. Besides, it is quite spaced out: the buildings are spaced at high intervals. This concurs with respect of shading rules within the city area.

5. Conclusion

This paper describes a methodological process to find the optimal layout of a city area to reach a maximal population density by respecting energy and solar access constraints. At present, we cannot give a ruling on the theory that density might be sustainable. However, this first study confirms that density and compactness are not necessarily correlated. Whenever the buildings within a city area are compact, the city area itself can be spaced out to obey shading and solar access rules. This research is currently in progress and additional results are awaited. By the end of our project, we expect to provide a better understanding of sustainable urban form. Specifically, we hope to be able to demonstrate the energy advantages and drawbacks of densification and sprawling and the relevance of sustainable urban towers.

Laëtitia Arantes - Olivier Baverel - Daniel Quenard
CSTB Grenoble, France

Notes

[1] Note that the size of the city area is not predefined. It can vary depending on the dimensions of the buildings. The area dimensions will be set during the optimization process.

[2] pe in an acronym referring to "primary energy". Contrary to final energy, primary energy considers the way the energy is produced. Moreover, the acronym SHON means "Surface Hors Œuvre Nette", whose equivalent is the net floor area. This surface counts, on top of the living surfaces, the surfaces filled by the external walls (that can have various thicknesses).

Bibliography

Ahmadian M. R., Vincenti A., Vannucci P., *A general strategy for the optimal design of composite laminates by the polar-genetic method,* in "Materials & Design", vol.32, 2011.

Arantes L., Baverel O., Quenard D., Rollet P., *A simple method to consider energy balance in the architectural design of residential buildings*, in Attar R., "SimAUD 2010, 2011 *Proceedings on Simulation for Architecture and Urban Design*, Boston, MA, USA, april 2011.

Backus J.W., *The Fortran automatic coding system for the IBM 704, the first programmer's reference manual for Fortran*, 1957.

Bertaud A., Malpezzi S., *The Spatial Distribution of Population in 48 World Cities: Implications for Economies in Transition*, 2003.

Capeluto I.G., Shaviv E., *On the use of 'solar volume' for determining the urban fabric, in "Solar Energy"*, Vol. 70, n. 3, 2001.

Cheng V., Steemers K., Montavon M., Compagnon R., *Urban form, density and solar potential*, in "PLEA, The 23rd Conference", Geneva, Switzerland, 2006.

CSTB (Centre Scientifique et Technique du Bâtiment), *Réglementation Thermique 2005*, Paris, 2007.

Demographia, *Demographia World Urban Areas (World agglomerations), 7th annual edition*, April 2011.

Fouchier V., *La densité humaine nette: un indicateur d'intensité urbaine*, in Pumain D., Mattei M.-F., *Données Urbaines* (Vol. 2), Anthropos, Paris, 1998.

Gomez-Ibanez J.A., *A Global View of Automobile Dependence, A review of Cities and Automobile Dependence: International Sourcebook*, in "Journal of the American Planning Association", Vol. 57, n. 3, 1991.

Gordon P., Richardson H.W., "Gasoline consumption and cities - a reply", in "Journal of the American Planning Association", Vol. 55, n. 3, 1989.

Hanitsch R.E., Schulz D., Siegfried U., *Shading effects on output power of grid connected photovoltaic generator systems*, in "Revue des Energies Renouvelables", 2001.

Kämpf J.H., Robinson D., *Optimisation of building form for solar energy utilisation using constrained evolutionary algorithms*, Energy and Buildings, n. 42, 2010.

Kirwan R., *Urban form, energy and transport: A note on the Newman-Kenworthy thesis, Urban Policy and Research*, Vol. 10, n. 1, 1992.

Knowles R., *Sun Rhythm Form*, Mit Press, Cambridge MA USA, 1981.

Littlefair P., *Passive solar urban design ensuring the penetration of solar energy into the city,* in "Renewable and Sustainable Energy Reviews", n. 2, 1998.

Ménard R., *Dense cities in 2050: the energy option?*, in "ECEEE 2011 Summer Study, Energy efficiency first: the foundation of a low-carbon society", 2011.

Montemurro M., Vincenti A., Vannucci P., *A two-step optimisation approach for the design of composite stiffened panels*, *Part I: global structural optimisation*, 2011.

Newman P.W.G., Kenworthy J.R., *Cities and Automobile Dependence*, Gower Technical, Sidney, 1989.

Niemasz J., Sargent J., Reinhart C.F., *Solar zoning and energy in detached residential dwellings*, in Attar R., "SimAUD 2011 Proceedings", Boston, MA, USA, april 2011.

O'Brien W.L., Kennedy C.A., Athienitis A.K., Kesik T.J., *The relationship between net energy use and the urban density of solar buildings*, in "Environment and Planning B: Planning and Design", n. 37, 2010.

Robinson D., Stone A., *Solar radiation modelling in the urban context*, in "Solar Energy", n. 77, 2004.

Salat S., Nowacki C., *De l'importance de la morphologie dans l'efficience énergétique des villes*, in "Liaison Énergie-Francophonie", n. 86, ADEME, IEPF, Québec, 2010.

Vincenti A., Ahmadian M.R., Vannucci P., *Bianca: a genetic algorithm to solve hard combinatorial optimisation problems in engineering*, in "Journal of Global Optimisation", n. 48, 2010.

Titles of figures and tables

Figure 1. Scheme of the building layout within the city area.
Figure 2. The optimization stages.
Figure 3. Best feasible solution versus generation for the urban layout problem.
Figure 4. The best feasible city area solution visualized from above on Rhinoceros® screen.
Table 1: Bound values of the optimization parameters.

Figure 1

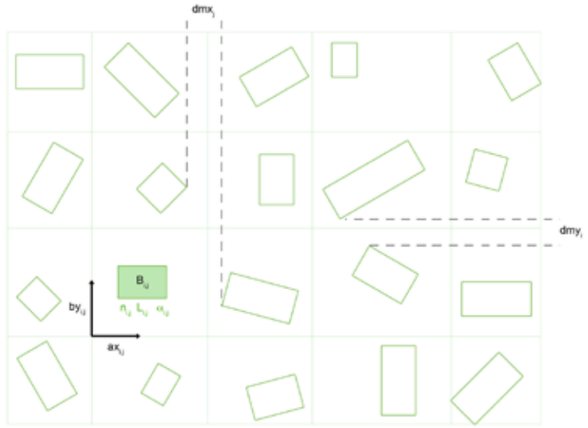


Table 1

Number of levels (-)	Length (m)	Orientation (°)
n_{min} / n_{max}	L_{min} / L_{max}	α_{min} / α_{max}
0 / 30	6 / 60	-165 / 180
	Horizontal relative position (%)	Vertical relative position (%)
	ax_{min} / ax_{max}	by_{min} / by_{max}
	0 / 0,95	0 / 0,95
	Horizontal space interval (m)	Vertical space interval (m)
	dmx_{min} / dmx_{max}	dmy_{min} / dmy_{max}
	0 / 500	0 / 500

Figure 2

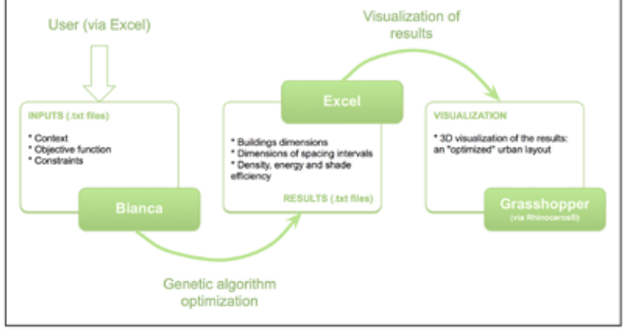


Figure 3

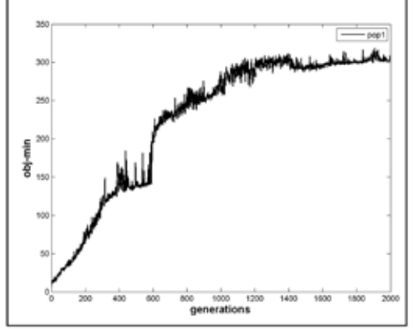
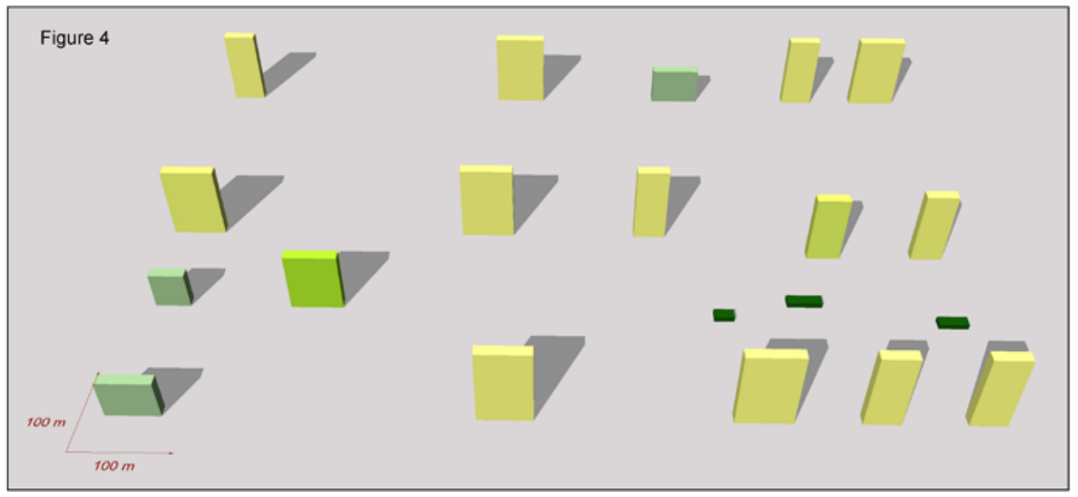


Figure 4



Ilaria Giovagnorio - Alessandra Curreli -
Giovanni Marco Chiri - Helena Coch Roura
Universitat Politècnica de Catalunya Barcelona, Spain
Università degli Studi di Cagliari, Italy

How environmental and energy issues shape the cities: a case-study in Barcelona, Spain.

1. Urban models and energy sources in city history

The current environment and energy conditions need reflection on the energy-intensive behaviour of the City on territory. The deep relationship between urban morphology and energy supply directly affects both the urban energy balance and the environmental comfort of areas where we live. This one-to-one connection historically led to the growth or collapse of urban models: if, on the one hand, the development and decline of the energy source enabled the growth of the man-made environment, on the other hand, land usage for residential and production purpose has determined the development and permutation of energy sources.
From this perspective, the entire city history highlights how urban form has changed during different epochs with relation to the function of energy sources. City models moved from early discrete villages, constrained within a compact and self-sufficient form fed on wood and animal muscular power, to the contemporary city, labelled by F. Butera as the energy and environmental *black hole*[1].
Inside this evolution, every crisis caused by an energy source generated a mutation of the previous city's shape. An example are *Coke-towns*: technological innovations, especially in infrastructure, pushed production and consumption sites away from the mines. Industry begot the quick growth of urban expansion in a process wherein «industrialization and urbanization phenomena appear inextricably linked»[2]. Saturated city-centres became unable to satisfy social and economic requirements, generating a new untidy building belt around the city: suburbs.
The nexus between production and consumption site, still active in this model, will be broken down later with electricity, which has had great importance on future urban form thanks to two main features: the introduction of a new supply technology, based on a broadly distributed network system, and the vertical development of buildings, enabled by elevators. Today the *Vertical City* symbolizes governmental economic power, yet skyscrapers reveal themselves as energy-hungry machines «which can consume easily up to 1.000 kwh/m^2/year, a value 8-12 times higher than normal construction»[3]. Similar to former circumstances, the advent of oil has once again modified the previous city-types toward a sprawling and *'dilute'* urban model strongly linked to individual car utilization. The limit of this urban model, already found in excessive land use, revealed itself during international oil crisis of Seventies. The oil embargo, in fact, has led scholars to reintroduce in their research energy-saving and efficiency issues, while also studying the improved urban design[4]. In this way, all 'physical' parameters which had been entrusted to technology and which directly affect the city's energy behaviour (density, H/W ratio, volume ratio, orientation, etc.) came back to the core of debate on efficient and self-sufficient urban form, strengthened by M.K. Hubbert's theory on peak of oil and the following *Green Apocalypse*[5].

2. Objectives

In light of this historical relationship between urban structure and energy sources, the current urgent requirement to switch-over towards new renewable sources make us wonder about the shape of future Renewable City. This requirement constrains designers to pay attention from the early stage of the process to the weather and environmental conditions in which the design will exist, in order to define it according to its energetic and environmental behaviour. The importance of working at an urban scale is confirmed by international and European commission which assigns great importance to the city action, suggesting urban design as the ideal tool to reach urban sustainability's main goals: «The way land is used in an urban area is fundamental to a town or city's character, its environmental performance and the quality of life it provides for its citizens [...] Sustainable urban design will therefore be a key element of the thematic strategy for the urban environment»[6].
Most recent research addresses the size of the building in order to shorten the planning process and to facilitate the ease of construction, but an interesting study[7] shows how, in the long run, results achieved in this way lose their efficiency, demanding a jump of scale toward that of a city. In fact, a building has a confined capability and is unable to solve prior urban design mistakes. Today, advancements in informatics systems provide designers useful software to estimate energy and environmental performance of a given urban form. Software supports designers without replacing them: it provides quantitative data and trend analysis, but it is unable of expressing the quality of space which remains architect's task and responsibility.
Consequently, the transition towards a more efficient urban form involves energy-environment parameters and quality of urban space, both of which are contained within the urban fabric unit: the block. The latter gains importance in sustainable design, due to its scale half-way between city and building size, and works at the same time on buildings and public space, improving both the quality of urban space and the energy performance of cities.
The paper applies these topics on a case-study in Barcelona; the main objectives of this study are to:
- Demonstrate how the environmental performance of the urban texture is related to the dimensional and morphological characteristics of the fabric, with specific regard to the streets orientation and the proportions of the urban canyon.
- Provide guidelines to improve energy performance and environmental comfort both in new and existing urban area through urban design.

3. The case-study

The *Eixample* district (Fig.1) is a representative synthesis of the features of the compact and complex Mediterranean urban model. The interest in this case-study depends not only on its particular morphology, but also on the approach and the design process developed by Ildefons Cerdá, which guided the transformation of Barcelona from a walled town into a modern city (1859).
One basis of the planning method was the knowledge of the city real estate as the main reference to understand the actual needs and the future perspectives of development. Cerdá reports the insalubrious living conditions and the inadequacy of Barcelona to integrate the upcoming energy sources (*i.e.* the steam engine) and recognizes public health and universal mobility as the main objectives of the urban renovation process.
The second step of the planning process is the principle of equality, aimed at ensuring respectable quality of life (in terms of residential standards and hygienic conditions) as well as uniform accessibility to urban services and infrastructure (public and green spaces, transportation, supplies).
The formal structure of the *Eixample* is defined and sized through a mathematical formula which constitutes the scientific application of the previous principles[8]. The result is a quadrangular chamfered block (*illa*) with sides 113.3 m long and a 60x60 m inner garden (patio). At first, the buildings should have been 16 m high and occupy only two sides of the *illa*, but the pressure of private owners and the postwar speculation led to much more intensive edification.
The disposition of the blocks according to a regular array defines a grid of streets 20 m wide, formed by a central driveway and two lateral sidewalks with plane tree rows. *The street canyon geometry* and the 45° network orientation established by Cerdà are devised to ensure adequate exposure of the main sides of the block to solar radiation and to healthy winds .

4. General approach and methodology

The methodology refers to the conceptual frame defined by Cerdá which might be considered a operating tool to establish appropriate strategies for the forthcoming transformation of contemporary cities[10], but takes advantage of the digital tools available today.
The research is developed through the design of a generic virtual model based on the typological structure of the pattern, in order to avoid the specificities of a real urban context which might make the understanding of its environmental behaviour difficult.
The average measures to build an abstract but reliable mock-up are determined referring to the *SpaceCalculator*[11] (Fig.2).
Within the homogeneous fabric, a sample of 9 blocks laid out in a 3x3 array on a site area of 400x400 m is appropriate to provide correct information that can be extended to the whole sector.
The analysis is implemented in two steps with the support of specific simulation software:
1) Assessment of the environmental performance in outdoor spaces by means of *Envimet* program[12], considering the climatic parameters which affect the conditions of well-being:[13]
– Temperature (K°)
– Relative humidity (%)
– Wind speed (m/s)
– Solar flux (W/m^2)
2) Examination of the solar collection above the building envelope, by means of the *Heliodon* program[14]. In this phase, more specific indicators are calculated:
– Solar potential (Wh/m^2),
– Energy gains (kWh)
– Sunlight hours (h)
The digital simulation is implemented at winter (case A) and at summer (case B) solstices, in order to provide a complete picture of the site's climatic performance. The required weather inputs are obtained from the *EnergyPlus* database[15] (Fig.3).

5. Results and discussion

5.1 Environmental performance of outdoor spaces

The overall results refer to the pedestrian level (Fig.4 and 5).
Temperature (T) and *relative humidity* (Hr) are two interrelated air properties which affect thermal comfort and can be analysed together . In this case-study, the form of the urban fabric does not seem to directly affect the spatial and temporal variation of these parameters whose performance is probably influenced by the boundary's effects on the sample area. In both [A] and [B], temperature is fairly uniform in streets, crossings and courtyards and sporadic differences are found between shadowed and sunny areas. A similar tendency is detected with regard to relative humidity: only during the early afternoon of the 21st June, the Hr in courtyards is higher than in streets, due to the different degrees of closure of these spaces.
Contrary to the previous parameters, the *wind* performance is closely related to the morphological features of the built environment. The dominant North wind is symmetrically diverted in the direction of the streets, due to the 45° orientation of the grid. The street canyon geometry produces a *channelling effect* with air paths parallel to the long sides of the blocks. The vectors allow identification of a *skimming flow* regime in the street section, while, within the courtyards, the draughts are definitively weaker (V=0-1 m/s in A and B). The wider distance between opposite internal sides of the block results in an isolated *roughness flow* regime, with disturbed and contrasting wakes[17].
The only windward façade is the North chamfer, while the other sides are sheltered thanks to their own orientation. Almost stagnant zones are locally generated next to the corners, due to their position with respect to the main air flows; in the crossings, wind temporally recuperates its original direction, but with a speed reduction.
Solar simulation is run for a cloud-free sky conditions[18] which allow the best insight into the daily evolution of solar access. Only the *direct solar flux* is analysed.
In case A, all the streets have some hours of direct radiation, thanks to the diagonal orientation: the SE-NW axis are well-lit and warm between 9:30 and 11:00 h, while the SW-NE ones receive the sunlight from 15:00 to 16:00 h. Shadows cast by plantings along sidewalks are negligible because planes are deciduous trees. Courtyards are sunny in the North sector around midday, while the South portion does not get any direct radiation throughout the all day.
In case B, streets are fully exposed to solar radiation between 12:00 and 15:00 h, while sidewalks are partially sheltered by the trees, whose cast shadows reduce the incoming solar flux by about 60%. During the rest of the day, at least one side of the street is shadowed by the surrounding buildings. Crossings and courtyards are almost constantly exposed to solar radiation, due to the greater spatial openness and the absence of plantation.

5.2 Solar accessibility on the block envelope

Within the homogeneous portion of the Eixample, the study is limited to the central block while the surrounding buildings act as obstructions. Solar analysis is implemented with regard to vertical (chamfers, inner and outer façades) and horizontal (roofs and patios) components of the envelope (Fig.6, 7 and 8).
On the 21st of June (sun's altitude is 72° at 12:00 h), roofs have the highest solar potential and provide the maximum energy gains (58% of the total amount), due to a large and unobstructed surface area[19]. During the winter solstice, the general trend is the same, but the distribution of solar gains is more uniform.
With specific regard to solar access on vertical surfaces, in case B the average sunlight hours and the solar potential display a similar behaviour in outer and inner façades. The width of the courtyard would forecast a greater collection potential with respect to the external sides, but, in the first case, the shadowing of the transversal orthogonal façades have to be considered[20].
The different influence of h/w and h1/c ratios appears clear in [A], when sun rays are lower (23° at 12:00 h) and solar potential decreases of 28% from the internal to the external façades.
The 45° rotation of the street network allows all the sides of the block to receive some amount of solar radiation during the winter solstice and protects them from the direct East and West incoming solar flux during summer.

6. Conclusions and further development

The *Eixample* case-study demonstrates how to deal with energy and design issues at an urban scale and shows the great opportunities provided by the urban project. The conscious analysis of environmental parameters led to discovery of general relationships which can aid architects in renovations and new interventions.
The spatial and temporal control of climatic variables is fundamental to making the best planning decisions: each formal solution has to fit within a specific environmental context and to other specific morphological parameters. Concerning this, the simulation software might provide a fundamental technical support, but the designer still keeps a principal role in interpreting and elaborating the results.
In a Mediterranean climate, the diagonal orientation of the grid is a rational arrangement which provides equal solar exposure in winter and good protection in summer both on the façades and on the streets. Actually, its effectiveness is related with the urban canyon geometry: in this situation, the H/W ratio is constant in all directions, but the variation of this proportion according to the orientation might be an interesting topic to improve solar performance.
Similar considerations can be done with regard to air flow. The 45° rotation shields the buildings from the North wind, without substantially affecting its original velocity: the requirements of comfort in the streets[21] are therefore fully satisfied in summer (V=2-3 m/s), but not in winter (V=4-5 m/s). A narrower section would attenuate the air movements and flows, but would become uncomfortable in the warm season.
The solution can be researched in the typology of the urban block: the patio is a "buffer zone" between the exterior and the interior which offers the possibility to control the microclimate. In winter, it might become a "shelter" to enjoy free sunlight and moderate ventilation, while adequate protection from solar radiation could be provided by the vegetation in summer. Furthermore, the partial opening of the block would ensure the public accessibility, provide air renewal and reduce the relative humidity inside (over 80% in B)[22].
With regard to the "individual" comfort, the central courtyard allows dwellings to have a double opposite aspect and to take advantage of passive daylight and ventilation; concerning the technical use of the sun, the homogeneous height of the blocks would make it possible to exploit the roofs for solar active applications.
On the whole, the results show how, by paying attention to the local conditions, urban design can reduce energy costs which usually fall on buildings behaviour (lighting, heating and cooling system, etc.), improving dweller's environmental comfort. The interconnection between the urban and the architectural scales is confirmed, therefore, as a fundamental tool to achieve positi-

Ilaria Giovagnorio - Alessandra Curreli - Giovanni Marco Chiri - Helena Coch Roura
Universitat Politècnica de Catalunya Barcelona, Spain
Università degli Studi di Cagliari, Italy

7. Acknowledgements

Part of this research is founded by Sardinia Region with funds from PO Sardinia FSE 2007-2013 (L.R.7/2007) “Promotion of scientific research and technological innovation in Sardinia”.
This work is also supported by the Spanish MICINN under project ENE2009-11540.

Notes

[1] Droege, 2006
[2] P.H.Derycke, 1972 (De Pascali, 2008).
[3] De Pascali, 2008
[4] Among the most remarkable publications: S. Owens (1986); R.L. Knowles, (1974); L. Martin and L. March (1975); R. G. Stein (1977)
[5] The events that raised the Ecological Issue: the ozone hole discovery (1985) and the global warming (1986-88). Ingersoll, 2009
[6] Towards a thematic strategy on the urban environment. Eu, 2004.
[7] De Pascali, 2008
[8] The side of the block is the ratio among building height, street section and courtyard width. Serratosa, 2008
[9] Martín Ramos, 2010
[10] The urban dynamics have changed, but the way to work with them is the same. Busquets 2009
[11] A set of basic indicators of density and urban form. Berghauser Pont, Haupt, 2010
[12] http://www.envi-met.com/
[13] Serra Florensa, 1995
[14] By B. Beckers and L. Masset. http://www.heliodon.net
[15] http://apps1.eere.energy.gov/buildings/energyplus/cfm/weather_data.cfm
[16] Serra Florensa, 1999
[17] The flow regimes are functions of h/w and h/l ratios. Santamouris, 2001
[18] Both *Envimet* and *Heliodon* provide potential values of solar flux
[19] Roofs are located at the same height and not affected by obstructions
[20] Courtyards are not actually urban canyons described by a single cross-section. Erell, 2011
[21] Air speed values until 3.5 m/s are acceptable in outdoor spaces. Serra Florensa, 1995
[22] Values of Hr higher than 75% are out of the comfort zone. Olgyay, 1998

8. Bibliography

Berghauser Pont M., Haupt P., *Spacematrix. Space, density and urban form*, Nai Publishers, Rotterdam, 2010.

Busquets J. and Centre de Cultura Contemporània de Barcelona, *Cerdà i La Barcelona Del Futur: Realitat Versus Projecte*, Cccb, Barcelona, 2009.

Compagnon, *R. Solar and Daylight Availability in the Urban Fabric*, in «Energy and Buildings», n. 4, vol. 36, 2004

De Pascali P., *Città ed energia. La valenza energetica dell’organizzazione insediativa*, Franco Angeli, Milano, 2008.

Droege P., *The Renewable City. A comprehensive guide to urban revolution*, Wiley&Sons, Chichester (GB), 2006.

Erell, E., Pearlmutter D., Williamson, T., *Urban Microclimate: Designing the Spaces between Buildings. Earthscan*, London; Washington, D. C., 2011.

Ingersoll R., *Questione ecologica in architettura*, in «Lotus» n.140, 2009.

Knowles R., *Sun rhythm form*, MIT Press, Cambridge Massachusetts, 1981.

Martín Ramos Á. et al., *El Efecto Cerdà: Ensanches Mayores y Menores*, Escola Tècnica Superior d’Arquitectura, Barcelona, 2010.

Olgyay V., *Arquitectura y Clima: Manual De Diseño Bioclimático Para Arquitectos y Urbanistas*, Gustavo Gili, Barcelona, 1998.

Ratti C., Raydan D., Steemers K., *Building form and environmental performance: archetypes, analysis and an arid climate*, in «Energy and Buildings», n. 35, vol. 1, 2003.

Santamouris M., *Energy and Climate in the Urban Built Environment*, James & James, London, 2001.

Serra Florensa R., *Arquitectura y Climas*, Gustavo Gili, Barcelona, México, 1999.

Serra Florensa R., Coch Roura H., *Arquitectura y Energía Natural*, Edicions UPC, Barcelona, 1995.

Serratosa A., *Attualità dell’Eixample di Barcellona*, in *La città reticolare e il progetto moderno*, CittàStudi Edizioni, Torino, 2008.

9. Legend

Fig.1 The Eixample: the street and the chamfered blocks.

Fig.2 Typological model and morphological features of the urban fabric: plan and section

Fig.3 Monthly average weather data provided by Energyplus (A_June; B_December)

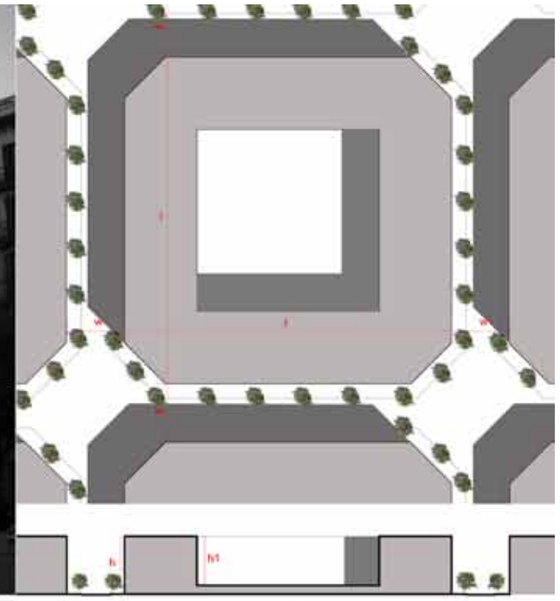
Fig.4 Daily evolution of climatic parameters on winter’s solstice (Case A)

Fig.5 Daily evolution of climatic parameters on summer’s solstice (Case B)

Fig.6 Graphical representation of sunlight time distribution in case A (right) and B (left)

Fig.7 Graphical representation of solar flux in case A (right) and in case B (left)


fig. 1



FSI	l	d	c	w	h	h1	h/w	h1/
3.15	113 m	25 m	63 m	20 m	29 m	17 m	1	0.27

fig. 2

INPUT CLIMATIC DATA	Average temperature (K)	Wind speed (m/s)	Wind direction	Relative humidity (%)	Specific humidity (g water/Kg air)
Case A	283	4,4	N	66	5
Case B	294	2,6	N	77	11

fig. 3

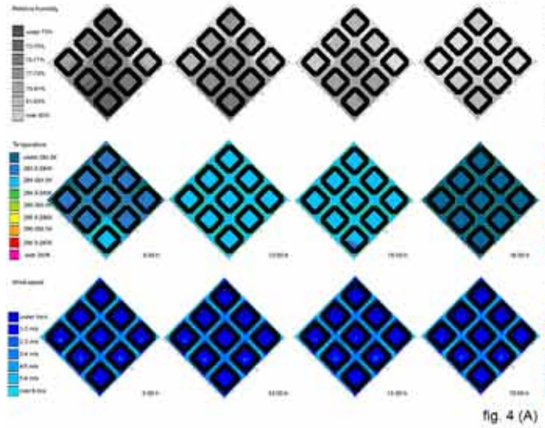


fig. 4 (A)

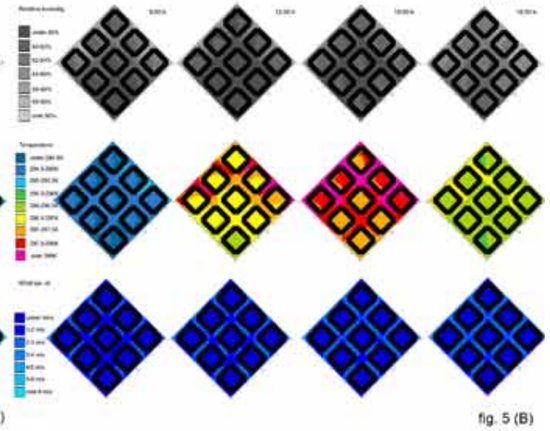


fig. 5 (B)

fig. 6

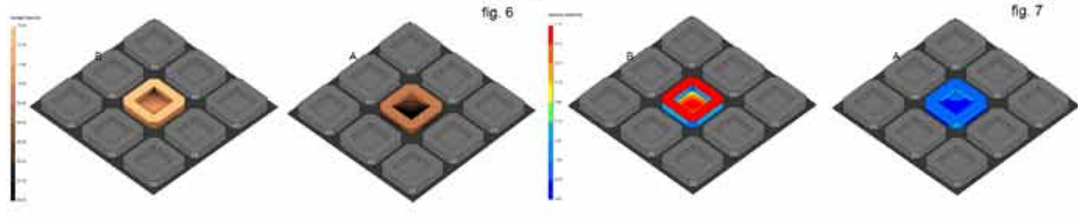


fig. 7

fig. 8

Envelope	Surface	Area (m²)	Sunlight time B (h)	Sunlight time A (h)	Total energy B (kWh)	Solar flux B (kWh/m²)	Total energy A (kWh)	Solar flux A (kWh/m²)
Horizontal surfaces	Roofs	8400	15	9	59731	7,11	9584	1,14
	Patio	3969	7,7	1,4	20620	5,20	1176,4	0,30
Vertical surfaces	Inner façades	4283	5,85	2,75	7607	1,78	3349	0,78
	Outer façades	6776	6	2,75	12235	1,81	3810	0,56
	Chamfers	1600	6,225	2,7	2793	1,75	1204	0,75

Doris Ehrbar - Ulrike Sturm - Peter Schwehr
of Applied Sciences and Arts Lucerne, Swiss

Methodology for the implementation of solar strategies in architecture

1. Introduction

'Architectural design must become the driving force for the use of solar energy'. This vision, formulated by Jens Windeleff and Anne G. Lien in the concept paper of the IEA SHC Task 41 Solar *Energy and Architecture*[1], is currently the case in only a few buildings. Solar architecture is often understood to be a purely technical addition and, as a result, its incorporation into the building design is mainly secondary. This reluctance to be creative is also reflected in the use of solar energy. Currently, solar energy provides only around 0.4% of the energy needed for hot water and 0.15% of the total electricity consumption in Switzerland whilst the potential on existing roofs has been estimated to around 30%, respectively[2]. Additional solar strategies on facades and in the design of the building could significantly raise this potential and make a considerable contribution to reducing CO_2 emissions.

The research project *methodology for the implementation of solar strategies in architecture* (Ehrbar et al., 2012) carried out by the Competence Centre for Typology & Planning in Architecture (CCTP) and the Centre for Integral Building Technology (ZIG) of the Lucerne University of Applied Sciences and Arts – Engineering and Architecture investigated the potential of solar strategies and the barriers that planners and architects face and that hinder them from integrating solar strategies into architectural designs.

1.1 Background

Solar energy use in buildings is not new. In earlier times, the challenges of the natural environment and the use of available natural resources was an important factor in building designs. After having been neglected for many years, more recently, it has again become an important issue with the growing need to reduce CO_2 emissions (Treberspurg, 1999).
To achieve the goals of the 2000-W society[3], heating energy consumption of residential buildings must, on average, be reduced by almost 50% before 2050. This will affect around 85% of existing residential buildings (Sturm et al). In reaction to increasing pressure to insulate the building envelope, the 1-ton CO_2 society strategy paper[4], presented by the ETH Zurich, demands that the CO_2 intensity of used energy should be reduced rather than primarily reducing energy consumption[5]. In this strategy, the focus shifts to building technology and locally available energies to cover the building's energy needs.
Recent events have shown that not only demands to reduce fossil energies, but also that supply security[6] and danger to the environment[7] are important arguments for an alternative energy policy. Under these circumstances, it is vital to actively encourage and promote local, regenerative energies such as solar, and to identify and overcome barriers.

A long-term sustainable building stock requires energy-efficient building concepts that are supported by all parties concerned rather than a one-sided energy strategy to construct and operate the buildings.

1.2 Aim of the project

Based on the aspects discussed previously, this project focuses on solar buildings in the context of architecture, typology and location, use and users, planners and architects, as well as currently available planning processes and tools. Considering these aspects from a planners' and architects' point of view is an essential step to reveal existing barriers and to set out the requirements that are to contribute to increased integration of solar strategies in architecture.

1.3 Methodology

Based on two case studies, a multi-family house in the Lucerne Elfenau residential estate built in the 1950s, and a replacement build of a residential building with offices in the centre of Zurich, the research project investigated a) the energetic relevance of active and passive solar strategies, b) planning process and planning tools to implement solar strategies and c) design possibilities for active solar strategies.

The following chapters will focus on the results of the Elfenau multi-family house. In this study, the energetic potential of different active and passive solar strategies was referenced to the heating energy demand of four different energy models of the building[8]. The investigations were carried out using the IDA ICE 4[9] simulation programme.

2. Energetic relevance of active and passive solar strategies

Results of the simulations of the Elfenau multi-family house clearly illustrated that heating energy requirements can be reduced significantly by well insulating the building envelope. Heating energy requirements of the existing building dropped from about 115 kWh/m²a[10] to about 15 kWh/m²a by renovating to SIA 380/1 new-build standards[11].

Passive solar strategies

Whereas a hypothetical change in the existing building's orientation and window size led to increased heating demands, it was possible to measure minor gains by adjusting both the indoor temperature ranges and the g-value of the glazing. By optimising type and regulation of shading devices the annual heating energy demand could be reduced by up to 10 kWh/m²a. Insulated balustrades and enclosed balconies with single glazing during the winter months achieved heating energy savings of around 18 kWh/m²a. Over all, the investigated strategies[12] achieved smaller measurable gains than expected.

The potential for making use of passive solar gains was significantly reduced both energetically and seasonally in well-insulated buildings, whilst the risk of overheating rose considerably during a large part of the year. In buildings with high internal heat loads - as is the case in offices – passive solar gains may not even be wanted. On the other hand, good use of natural daylight is essential in reducing energy needs for artificial lighting, making size, position and orientation of the windows, as well sun shading and glare protection extremely important design aspects. At the same time, type of use and users greatly influence the functionality of the building during its life cycle. This leads to the questions as to what extent the users should be involved in the operation of the building (e.g. regulation of shading); to which specific aspects of the building they have to adapt to (e.g. passive solar design of the building); and which discomforts (e.g. temperature variations during the day) they have to bear.

Active solar strategies

The output of around 54 kWh/m²a of a photovoltaic roof installation[13] more or less covers the lighting energy demand (about 25 kWh/m²a) of the existing building, and just over 50% of the energy needed to operate a ground-source heat pump[14] to cover its heat demand (about 139 kWh/m²a). By adding an active solar gable facade that produces about 17 kWh/m²a, it is possible to cover its total energy demands (Fig. 1).

The solar potential of both roof areas provides a great opportunity for the integration of active solar systems, while the possibility of using the gable facade needs to be examined carefully. The gable facade characterises the building and has an effect on the property, residents and society that is not to be underestimated. However, developments in the field of thin-film modules with screen-printed surfaces or organic solar cells not only allow an artistic translation of the technology, but also a reinterpretation of the built environment. This gives us reason to look forward to an exciting future of solar buildings. 'Activating all surfaces, technically and creatively is the challenge here; to develop a new language, one which communicates with people on an intuitive level' (Lüling, 2009).
As opposed to passive solar strategies, the energy production potential of active solar strategies does not depend on the building use or its users. With optimal alignment[15] of the thermal collectors or PV modules and little shade, energetic output may be estimated by the product's energy efficiency ratio. Vertical, south-facing surfaces are particularly suitable for solar thermal systems because they enable a well-balanced output throughout much of the year with a reduced output in summer and maximum output in winter. The choice of solar thermal or photovoltaic will be governed by the use of the building and the possibility to store energy or feed it into the grid.

Combination of Strategies

The combined use of different renovation strategies has proved to be very successful. If balconies are insulated and glazed, shading devices are regulated, the cellar ceiling is insulated and roof space converted and insulated, heating energy requirements can be reduced by more than half (Fig. 1) without substantially altering the appearance of the existing building. It would then be possible to cover the total energy demand of this building with a photovoltaic system on the roof and a ground-source heat pump.

Evaluation

Simulating different strategies with the IDA ICE 4 tool in the early design phase is complex and time-consuming. The expert tool is better suited for the later design stages and to answer specific questions posed by specialists. However, the outcomes of this study provide important indications of the energy potential of different renovation strategies, which are crucial for planners and architects to make well-founded decisions during the iterative design process. Even though it is not new to specialist planners, this know-how must however first made accessible to planners and architects.

3.Planning processes and tools for solar building design

The analysis of the Elfenau multi-family house showed that fundamental building characteristics such as surface-to-volume ratio, window size and proportions and layout of active solar surfaces all have a significant impact on the functionality of the building and need to be considered in the early design phases. Questions regarding user comfort come into play as the design is fine-tuned.

Planning process

Architectural design is an iterative process that runs through various problem-solving stages in which ideas and possible solutions are formulated and tested. Strategies representing the most likely solutions undergo a series of creative and qualitative assessments using sketches, plans, models or visualisations. In this way, unsolved problems can be addressed and the design continuously refined. Having reached a uniform and consistent planning status (e.g. at the end of preliminary draft or project phase), specialist planners are asked to carry out quantitative assessments. At this point, the design is quite advanced such that the potential for solar strategies is already limited. Even more, by not including the quantitative assessment into the iterative design process, optimisation between the building and building technology might be omitted.
The importance of linking technical issues and economic demands to ecological, social and architectonic issues increases the complexity of design projects. This demands comprehensive planning, which can only be resolved by interdisciplinary planning teams. At the same time, the importance of the early design phases (Reed *et al*., 2000) shifts the planning work into the early planning stages. The need for information at the beginning of the strategic planning phase and the sheer volume of information towards the end of the liability-sensitive and time-consuming early design phases are such that planners and architects are no longer able to guarantee to meet requirements with the existing processes and tools or inadequate honorary fees. This means that in a multitude of important decisions are (have to be) neglected or ignored the important early design phases.

Planning tools

Existing CAAD systems are, in principle, already equipped to aid almost any task in the architectural design process. CAAD software is ready to serve as a platform for exchanging data and designs as well as to enable virtual teamwork in multiple locations. Nevertheless, building data is often keyed in as two dimensional vector data in much the same way as hand-drawn designs and plans are forwarded to specialist planners in hard copy or digital form. Available assessment und simulation tools e.g. Lesosai[16] and Polysun[17] evaluate thermal performance and building technology, respectively. However, they often require detailed and time-consuming input of the building and its use, requesting information that is usually only available in the later planning stages (Keller, 2011). Consequently, these tools are hardly ever used by planners and architects as they do not meet their need for simple and visual tools that are integrated in the work environment and that facilitate exchange between programmes and software packages[18].

4. Design possibilities for active solar strategies

The example of the Elfenau multi-family house showed the opportunity to re-interpret the facades of residential buildings by using active solar products (solar thermal or photovoltaic) in the sense of a 'change in metabolism' (Mallgrave, 2004). This was achieved by using the 1950s wallpaper pattern in the stairwells, the effect of light and shadow through the trees in winter or a leave pattern (Fig. 2). Here, the determining factor was the appearance of the building and its design details, not technical feasibility or energetic maximisation. At the same time, aesthetic demands, the desire for customised design and the integration into the facade indicated a negative impact on the efficiency rate and on costs. However, a positive cost-benefit ratio can still be achieved by taking the synergetic use of active solar products in the building envelope, improved appearance and the expression of the building as positive values into an overall consideration.
To achieve a broad effect of active solar strategies in architecture, adequate consideration must be given to the building envelope. The new design concepts should harmonise with both the local and regional setting and the building type. Also, they must raise awareness that the sun is a source of light and energy. Public acceptance of solar buildings is achieved only by buildings that make a strong visual statement (Herzog, 1992).
At the same time, cost reductions due to streamlined production, decreasing material consumption and improved efficiency will increase the number of customised photovoltaic products. In addition, larger surfaces will compensate for lower efficiency rates. It is likely that thin film photovoltaic will cover roofs and facades, windows and building components (Lüling, 2009) and introduce a new generation of active solar buildings.

5. Demands

Based on the outcomes of this study, ten demands were formulated that should be considered, if solar strategies with a high multiplication potential and in respect of the building and the environment are to be integrated into architecture:

1. The method for incorporating solar strategies in building design has to be based on *a holistic view of the building* that considers the building as a system and includes its context.

2. *Guidelines for the qualitative assessment of solar strategies* for planners and architects are essential to be able to incorporate planning relevant decisions in the earliest possible planning stages. These guidelines (comparable to town planning guidelines) show what information must be available and which specialist planners should be consulted at the respective planning stage to enable optimal integration of solar potential in the design.

3. *There is a need to adapt the fee regulations*, to promote interdisciplinary collaboration in the early planning stages and to assess planning in the early design stages. Early collaboration of interdisciplinary teams causes high costs at a stage where there is great uncertainty regarding the feasibility of the project. They are necessary however to successful manage the complex challenges of well-designed solar buildings and to reduce planning, construction and operational costs at a later stage.

4. *Simple-to-use quantitative assessment and simulation tools* that are integrated into the planning environment of planners and architects are required to qualitatively evaluate decisions taken in the early design phases. They enable a choice of assessment criteria (e.g. costs, CO_2, heating and lighting energy requirements, active solar gains) and provide continuous feedback relevant to changes in the design. The tools provide data input assistance and predefined templates which can be refined during the course of the planning process. Preferably, this information can be forwarded to specialist planners for further evaluation.

5. Data needed for the planning of solar buildings should be made available in *up-to-date, standardised and freely accessible databases* that can be directly accessed by the assessment and simulation tools. To satisfy the need for up-to-date databases one has to consider how this data can be regularly maintained and updated in a rapidly changing environment.

6. The lack of *appropriate communication platforms prevents planners and architects* to acquire available know on how to integrate solar strategies in architecture or how to combine technical requirements and design values. Increased use of solar strategies in buildings largely depends on whether they recognise their freedom in design and know-how to apply it.

7. Planners and architects are vital in communicating *matters relating to solar issues*. Solar architecture must be expressed through existing architectural design principles. To do so, existing architectural terminology has to be extended to include the new elements of climate rhetoric. The aim is to advance the architectural language of today and redefine its meaning.

8. Profitability assessments of solar products and systems have to shift from cost-efficiency calculations to *holistic considerations of output per surface* including costs, use, design value etc. This enables more scope for increased integration of solar strategies in architecture or a fusion of building and technology to new climate rhetoric. Only in this way can solar strategies become important vehicles of sophisticated architecture.

9. *Collaboration between planners and architects and providers of solar products and systems* is desirable in order to extend the product range and to transform a 'technical product' into a 'building material' that is recognised as such. With decreasing costs, more customised products are used.

10. *Assurance in planning* is an important prerequisite to increase the integration of solar strategies in architecture. This means determining long-term social-political goals, a purposeful interpretation of flanking measures as well as clearly communicated decision-making fundamentals.

6.Conclusion and outlook

So that more solar strategies in building design can be applied, a know-how and increased collaboration between planners and architects and specialist planners is essential. They have to acquire the competence to be able to combine energetic, creative and technical requirements with building use and user requirements. The better solar buildings incline to building use and user requirements, the better the aims with regard to energy and comfort can be achieved and the broader the effect will be. Commitment of planners and architects, clients and users is a crucial element for future acceptance of solar strategies and to establish new climate rhetoric.

8. Notes:

(1) www.iea-shc.org/task41
(2) www.swissolar.ch/de/medien/fakten-und-zahlen [2011]
(3) www.novatlantis.ch/2000-watt-gesellschaft/vision.html [30.7.2011]
(4) SFOE, 2006
(5) www.zivilgesellschaft.ch/content/view/75/60/lang,de [30.7.2011]
(6) e.g. Gas supply bottleneck in Europe during conflict between Russia and Ukraine (2006)
(7) e.g. Chernobyl nuclear accident (April 1986), oil disaster in the Gulf of Mexico (2010) and the Fukushima nuclear accident (March 2011)
(8) Used standards: a) stock, b) SIA380/1-renovation, c) SIA 380/1-new-build and d) Minergie-P standard (building replacement with same volume)
(9) www.equa.se
(10) All energy data refers to the buildings' energy reference area (ERA)
(11) www.sia.ch
(12) Influence of thermal mass was not investigated
(13) Calculation basis: SSO-oriented pitched roof with a 23.7° slope and a PV plant with 11% efficiency rate
(14) Calculation basis: ground-source heat pump with JAZ 3
(15) Orientation and pitch
(16) www.e4tech.com
(17) www.velasolaris.com
(18) Results of international survey [available at: www.iea-shc.org/task41]
(19) Source: www.s-m-i-t.com [2011]

7. Bibliography:

Ehrbar, Doris; Moosberger, Sven et al.: *Methodik zur Umsetzung von solaren Strategien in der Architektur.* Schlussbericht. – Luzern: Version 2; Hochschule Luzern - Technik & Architektur, CCTP und ZIG; 2012.

Herzog, Thomas: *Europäische Charta für Solarenergie in Architektur und Stadtplanung.* In: Lampugnani, Vittorio Magnago et al., *Architekturtheorie 20. Jahrhundert. Positionen, Programme, Manifeste*. - Zürich: gta Verlag; 2004, 313-317

Keller, Bruno: *Energy Design Guide II.- Berechnungsmethode*. Available at: http://energy-design-guide.ch [30.7.2011]

Lüling (Hrsg.): *Energizing Architecture. Design and Photovoltaics*. - Berlin: Jovis Verlag; 2009

Mallgrave, Harry Francis: Gottfried Semper. Ein Architekt des 19. Jahrhunderts. - Zürich: gta Verlag, 2004, 303

Reed, William G.; Gordon, Elliot B., *2000: Integrated design and building process: what research and methodologies are needed?* In: *Building Research & Information, Special Issue*, Volume 28, Nr. 5 / 6; 2000

Sturm, Andreas, et al.: *Energieperspektive 2050 der Umweltorganisationen*. – Basel: Ellipson AG; 2006.

Treberspurg, Martin: *Neues Bauen mit der Sonne*. 2nd Edition. Wien, New York: Springer-Verlag; 1999.

9. Legends:

Fig. 1: Potential for energy savings and gains using different renovation strategies

Fig. 2: Elfenau multi-family house
a) south-west facade of existing building
b) wallpaper pattern of staircase
c) facade with wallpaper pattern
d) facade with effect of light and shadow through trees in winter
e) Solar Ivy thin film PV (19)
e) facade with leave pattern

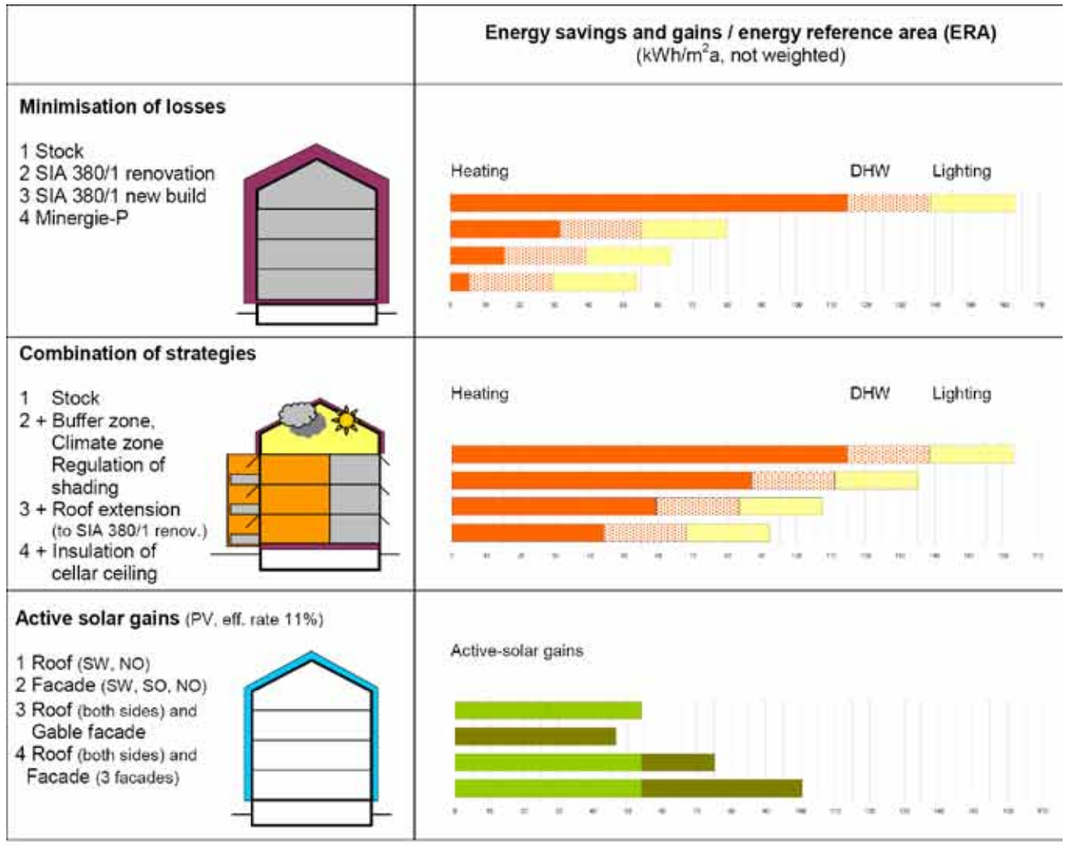


Fig 1

Fig 2

Giovanna Franco
Università degli Studi di Genova, Italy

Memory, values and destiny of twentieth century inheritance

The rapid cultural evolution of the beginning of twenty first century, with new relationships between time and space (space expands to infinity and time is reduced to seconds), natural and artificial, real and virtual, are profoundly changing the perception of time and history, pushing us in a dimension of simultaneity (of events, of possible synchronic histories, of, images and architectures) which certainly characterizes contemporary life. But how do we look at the recent architectural and urban inheritance? What values are we able to recognize, how can we make selections (and are we really legitimate to do that)? Which strategies could we imagine for future changements and transformations?

Around these questions, the paper intends to open a reflection on recent interdisciplinary researches carried on at the Faculty of Architecture of Genoa among teachers specialized in Architectural Restoration, Urban Planning and Technology of Architecture, stressing the inevitable connections among these and even more disciplines (i.e. building physics). Researches, purchased by the Municipality, the Ministry of Culture, the Ligurian Region, are focused on parts or segments of Ligurian and Genoese built inheritance. They all deals with the future destiny of these objects or settlements, whether they are large parts of the suburb edified in the '80 (the so called ERP Public residential building), or residentail settlements edified immediately after the age of "reconstruction" (within and architectural value is more readable, as INA-Casa production), or even masterpieces of Modern and Contemporary Architecture (the research intends to recognize the most significant architectures, their state of conservation, their values to be preserved).

Once exhausted the vast process of urban expansion that, after the Second World War, lasted roughly until the end of the '80s, and also due to the economic decrease, the Italian architectural and urban culture, between twenty and twenty first century, questions about need, motivations, and techniques of intervention on the newly built inheritance. Between the end of the twentieth and start of the twenty first century, society began to question the necessity, motivations and form of participation needed in the construction of new buildings.
At the beginning of this process of re-thinking on urban transformation, the attention was posed on significant episodes (as disused heavy industrial settlements). These huge parts in the peripheral cities, named as great "urban voids" have been seen as an "opportunity" to rethinking requirements, forms and patterns of settlement of a changing society.

In the recent years, architectural and urban culture takes deeper awareness of the fact that recent (and very recent) buildings age more quickly, and so worse than the old ones, to reach out to an early and worrying obsolescence. Neglect, degradation, inefficiency, unreliable performance, a lack of security in the workplace and in life generally and an absence of identification and culture are often translated into social unease and both individual and collective alienation. This situation is profuse in the peripheries and particularly in the urban fabric of many government subsided buildings.

In all these cases, the research cannot be stopped at the pure technical level (recognizing materials, techniques, state of deterioration and suitable technique of intervention and restoration or even energy efficiency improvement), but must be moved to different layers, regarding our contemporary aspirations, cultural references, values.
The issue with legacies like this becomes first and foremost a cultural one. This is the result of a slow process of historicising that makes us look at our recent past with progressive detachment, from a different standpoint with respect to the way we live and therefore modifying the present. «There is no memory without forgetting» (Cacciari, 1993) - was written with regard to the never ending dispute between old and new and translated now into the dualism between conservation and demolition.
In this perspective, and also with educational purposes, it becomes more interesting to watch the production of the late twentieth century discarding those individual works which, due to the notoriety of the author, are becoming recognized materpieces of the late twentieth century. It seems more interesting to look at the contemprary city (or urban sprawl, to borrow a felicitous phrase) with a diachronic approach, putting in relation individual and collective time, whose connections helps to explain the significance of an architectural or uban product (Olmo, 2010).
Still absent, in fact, from the history of the twentieth century architecture, are connections between social practices and techniques, helpful to overcome traditional historiography, in the attemp of understanding the substantial mutation of the built landscape during the twentieth century, searching for a concept of "modernity" as a network of scales and actors, using hierarchies (including values) not "a priori" fixed.

Attitude towards a contemporary social housing complex: a paradigmatic example

Paradigmatic example of this approach is the recent research, undertaken by the City of Genoa, to identify strategies for regeneration of a large complex of social housing.
The design,planning and construction, in only four years (1982), of a large neighbourhood designed to house around 10,000 inhabitants in Valpolcevera (an area in the immediate hinterland west of Genoa) may be the biggest challenge, in terms of housing policy, that the council administration has undertaken in the last century. A challenge that seemed to have been won at the time. The extreme speed of the construction site and the creation of nearly 1,000 residences, streets, car parks, sports centres, the implementation of a process of rapid programming with an unprecedented speed of administration, as well as the fact that the project had put into effect instruments for town planning, expropriation, legislation, executive and complex financial direction and all with the participation of both public and private organisations all pointed to success.

In retrospect we can now see that the challenge was in fact lost. The project failed to centre its objective on effective penetration of the new district and its progressive integration with the existing city. The project transformed an historical problem of a "housing crisis" into a burning problem of "crisis housing" by failing to create favourable community relations. It is definitively a failure for having given life to an emblematic case of the concentration of social disadvantage and the height of urban insecurity.

The project perhaps represents the first and only episode of industrialised housing in an urban context with the application of a banches et table system in situ. The housing is built in stages which, given the size of the settlement, means that work can proceed simultaneously in different parts without any interference between the different works teams. This allows for a notable reduction in time (one apartment can be built in a average of 2.36 working days) and costs (at least half the cost of a conventional construction). However, the low-cost process leads to problems in the actual construction phase: very few companies present themselves in the tender process claiming that they will work at a loss; the building site undergoes considerable difficulties due to a lack of personnel and as a result it is almost impossible to coordinate with the utilities providers; the low cost of construction does not allow for minor changes and improvements to the finished model and finally, even before the finished site has been given confirmation of habitability, there is strong pressure to occupy the apartments with removals companies already on site.

Facing the urgent and unavoidable problems posed by this large Genovese "megastructure", like, in the history of recent urbanisation do other similar Italian examples such as Corviale, Rozzol Melara, Zen and Vele di Scampia, the mayor of Genoa, through the Area Grandi Progetti Territoriali, has appointed the INU (National Institute of Town Planning) Liguria, under the scientific responsibility of its president, Professor Roberto Bobbio, to develop a comprehensive research study. The research, which seeks to define target areas for improvement and enhancement of the previouslu mentioned complex named «Diga di Begato», has used the participation of different key players: concept designers and administrators, current inhabitants, politicians and technicians (experts in various disciplines and others with relevant experience) to create a timely piece of work that manages to bring together historical events, urban planning and design and identifies many different problems of varying scale and nature. Within this framework, the author was charged with the task of developing the study in relation to the material and construction characteristics and the actual state of preservation of the complex. The task includes reconstructing a picture of the events and effects resulting from decisions made in the design phase (a distribution system that has perhaps already demonstrated its inefficiency in current and previous examples), to events that occurred in the construction phase (the very low costs and reduced time limit did not allow for a meticulous control of the mode of execution in the testing phase), to problems arising in the inhabitation phase (the total absence of care by certain inhabitants for the abandoned parts leading to the degradation of the property which, not accidentally, resulted in illegal occupancy or occupancy by people with severe social problems).

The comparison between the specialist investigations and experiences of administrators has led to a rich and varied set of guidelines for objectives, strategies and recommendations, which are an absolute priority for contemporary Italian cities and must continue to be carried forward by social housing development policies.
The «Diga», made up of two buildings, one of 276 apartments, the other of 245 finished with different colours (red and white), initially attached half way up by a horizontal passage, with a total volume of 140,000 metres cubed is characterised by a strong impact on the environment and landscape. The complex is in fact named Dam (Diga) because it obstructs, almost completely, a small tributary valley of Valpolcevera.

The architectural characteristics, the low quality of materials, the distribution and definition of public spaces and a certain utopian vision on the imposition of the urban megastructure now exacerbate the social difficulties of coexistence and induce illegal or deviant behaviour. Added to this, the method of assigning housing, which favours those who are the most economically disadvantaged, results in the inescapable development of ghettoisation. The excessive concentration of poverty and the socially marginalised (users affected by psychopathological problems, recently released criminals or those on probation, ex-drug-addicts etc) has increased illegal behaviour in some and decreased the capacity for reaction in the majority, this in turn has led to many prospective inhabitants actually refusing housing in Diga (Bobbio, 2010).
Like many buildings of the late twentieth century, the Dam suffers from a common and recurring housing problem: the exceptional physical size of the settlement induces greater levels of discomfort.

By analysing in detail the structural characteristics of the side walls, the floor covering, balconies, ledges and loggias on the various floors, several construction "defects" emerge. These are typical of standardised construction, in which the geometric discontinuities and the connexion between the parts and the components built under grand economies of scale constitute, without doubt, the "weak" elements of the system (especially for infiltration and stagnation of rainwater). Each infiltration provokes, with the stagnation of water, the decay of the foundation of the floor, the metallic laminate and the insulation. This then loses it functional efficiency and as a consequence damages the value of the theoretically calculated thermal transmission.

The construction of an organic system of deterioration, briefly mentioned here, is supported by a number of causes and contributing factors and constitutes the pretext for the development of some other considerations. The exceptional size of the building, with the exceptional problems that this brings, has led to a shift in focus of the project. It was intended to act as a single piece of research into a new arrangement or solution but it has now taken on the role of a programme with a process (and suddenly, since it changed whilst it was being developed). It includes progressive actions involving different participants, working from the moment of conception and formulation of construction choices to its development over time. This change is particularly important for the object of study, which the public administration has invested large sums of money into over the last few years in order to remedy certain faults or resolve some inefficiencies. However it did this without first having constructed a coherent and comprehensive picture of the interventions, and without having radically eliminated the causes of these problems (especially the infiltration of rainwater). A further consequence of this approach is the prediction of the relationship between the planned actions and the probable consequences, not only in terms of efficiency (by which today we mean mainly energy saving and reduction of harmful emissions), but also in terms of value (a real response to problems and durability over time).

Values and destinity of the complex

The story of the Dam, its successes and numerous failures, clearly confirms that it is necessary to undertake a path which knows how to identify different systems of values (or non values) and their reciprocal relationships as well as evaluating the possible consequences to that system resulting from any future modifications.
Today the re-development of the Dam is one of the main problems that ARTE (Regional Agency for Buildings in the Province of Genoa) invests in. This agency is in charge for the maintenance, but overall, the municipal administration of Genoa is still responsible as owner.

Addressing the problem of improving the Dam means being able to continually shift focus from the detail (such as resolving the problems of physical decay, functional inefficiency and technical shortcomings) to the whole urban structure and a huge transformation of the whole of Valpolcevera. It also means being able to make the most of what is still a green lung and that may become a new urban centre. The suspension of polluting industrial activity, the localization of some large urban services (such as general markets, large structures for trade and in the future the new hospital and perhaps stadium), a rediscovered residential area and the establishment of the IIT (Italian Institute of Technology, a centre for excellence in research at a national level) have all led to Valpolcevera adopting a new role within the city and metropolitan area.

The problem still remains however as to how to solve the extreme conditions of degradation while at the same time negating current public opinion of the Dam as the "monster neighbourhood". For some time, and from several parties, opinion has been that demolition would be the most courageous act; assuming responsibility and publically denouncing the failure of this stage of town planning and housing development so close to us.
The Dam case certainly represents a paradoxical example. However, it is emblematic of a problem, that is becoming more and more widespread; that the only possible intervention on large recently built real estate is demolition. This is seen as the only real response capable of meeting the demands for new high quality architecture and environment (Pedretti, 1997).

The work done by agreement between the Council and INU has very much tried to avoid the trap of a sterile and sometimes ideological debate between the factions in favour and those against demolition. The difference between the parties involved has in fact led to a softening of some initial opposition. The results of the research aimed to verify the results obtained from other recent redevelopment initiatives and to decide if these should be extended into other parts of the complex or whether changes should proceed with more radical action.

At the end of this experience many of the participants have acquired a much wider understanding of the Dam case than they had initially; this result alone is a success of the initiative. With respect to the distrust of non-EU nationals for example, it is now understood that the very young immigrant population (the only type of new residents) has now been able to recreate social environments and reclaim outdoor spaces that had been in a state of almost total neglect. The inhabitants themselves, through a long process of active participation and with the help of social services, have been able to create strong bonds amongst themselves and within their neighbourhood. Paradoxically, the place that is viewed from the outside as an area totally devoid of identification and security has now become for the inhabitants (at least in part, inside the red buiding) something which gives them a sense of identity and belonging. A total demolition, often feared or actually invoked, might suddenly destroy not just the physical structure but also a solid social bond that over the ye

ars has taken root in some of these spaces. This bond brings this neighbourhood to life, creating social groups where they did not previously exist and developing across the diverse members of the resident population. There is no doubt that there is now a renewed sense of place (a place which presents the benefit of being one of the last remaining "uncontaminated" green valleys) and this induces the inhabitants to take more care and pay more attention to the structure of their housing (Bauman, 2003).

Work on such apparently negative events has led to the discovery little by little of some signs of positivity. These values, though weak, and not immediately evident, bring into question several prejudices surrounding the fate of certain assets. We can now attempt to develop a «relevant knowledge» (Morin, 1999), capable of grasping the fundamental and global problems by imposing on them the local and particular knowledge, and by attempting to understand the results of a varied culture of the 1900s, in historical terms.

Bibliography

Augé M., *Ou est passé l'avenir?* Editions du Panama, Paris, 2008.

Bauman Z., *Intervista sull'identità*, Laterza, Roma-Bari, 2003.

Bobbio R. (Ed), *Il caso "Diga". Strategie di riqualificazione dell'edilizia sociale a Genova*, CD Rom, INU edilizioni, Roma, 2010.

Calvino I., *Six Memos for the Next Millennium*, 1985.

Cacciari M., *Conservazione e memoria*, in «ANANKE», n. 1, 1993.

Curtis W., *Modern Architecture Since 1900*, Phaidon Press, London, 1982.

Frampton K., *Studies in Tectonic Culture: the Poetics of Construction in Nineteenth and Twentieth Century Architecture*, MIT Press, Cambridge, Massachusetts, 1999.

Franco G., *Atlante cronologico del Novecento in Italia, in G. Giebeler et al., Atlante della riqualificazione degli edifici. Manutenzione, modificazione, ampliamento*, UTET, Torino, 2009 (ed. it.).

Gardner H., *Five minds for the future*, Harvards Buisiness School Press, Boston, 2006.

Hobsbawm E., *Age of Extremes. The short Twentieth Century 1914-1991*, 1994.

Hösle V., *Philosophy of ecological crisis*, 1991 (or. Philosophie der okologischen Krise).

Latouche S., *Survivre au développement*, Mille et une nuits, Paris, 2004.

Lyotard J.-F., *La Condition postmoderne: rapport sur le savoir*, 1979.

Morin E., *Les sept savoirs nécessaires à l'éducation du futur*, UNESCO, Paris,1999.

Olmo C., *Architettura e Novecento. Diritti, conflitti, valori*, Donzelli Editore, Roma, 2010.

Pedretti, B. (Ed), *Il progetto del passato. Memoria, conservazione, restauro, architettura*, Bruno Mondadori, Milano, 1997.

Picon A., *Digital Culture in Architecture. An introduction for the design profession*, Birkhäuser, Basel, 2010.

Legend

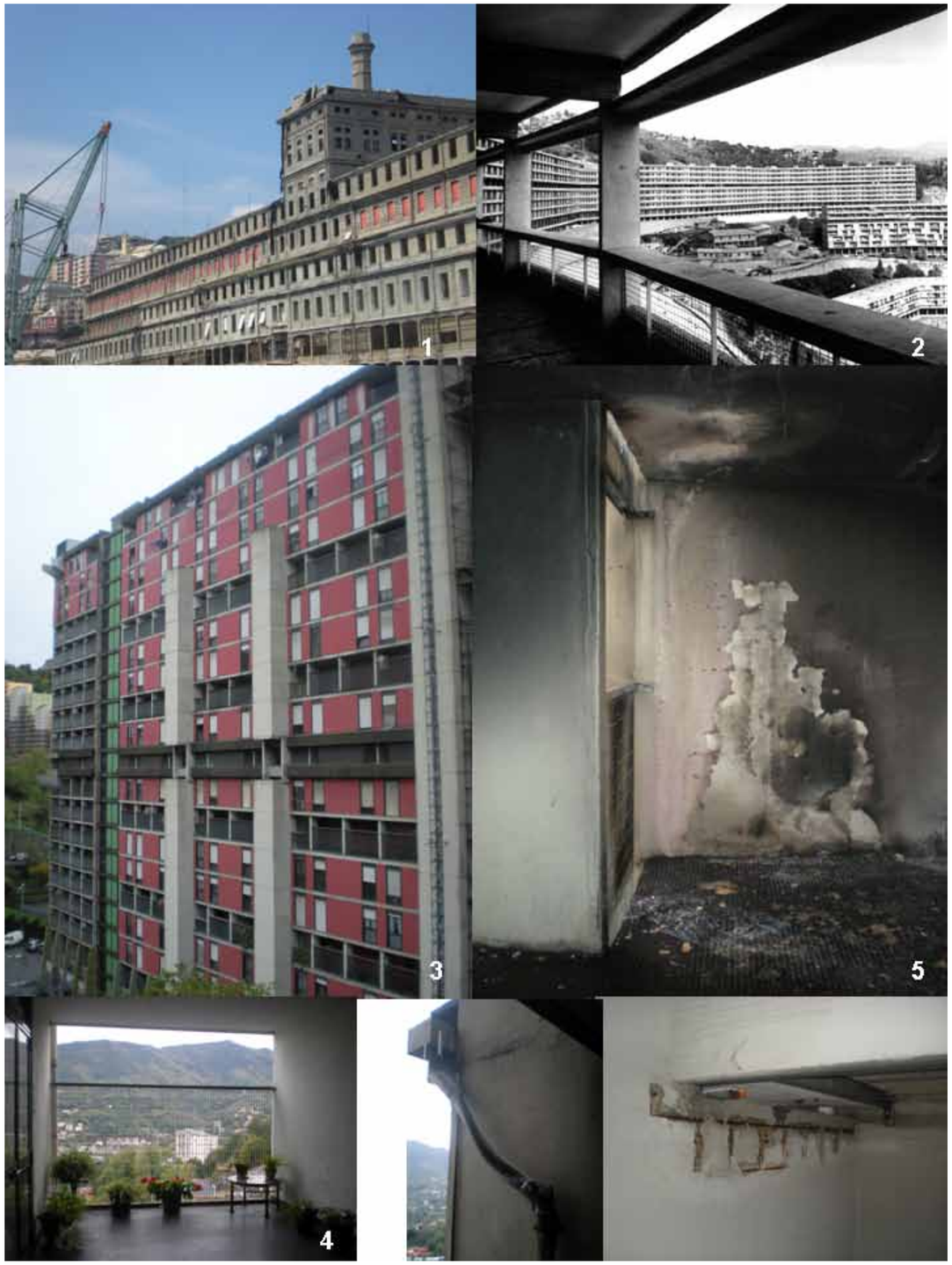
Fig. 1 Changing perceptions of urban "megastructures": warehouses in the centre of old harbour, Genoa (beginning of twentieth century), recognized as one of the first examples of reinforced concrete structures in Italy. The building is still waiting for a new use.

Fig. 2 The so called "big snake" (INA-Casa quarter in Genova Quezzi, L.C. Daneri coordinator, Genova, 1956). The critical success of the complex changed, over time, public opinion.

Fig. 3 The so called "Dam" (Diamante Quarter in Genova Begato, P. Gambacciani coordinator, 1982), red building.

Fig. 4 The "red Dam", the care of inhabitants.

Fig. 5 The "white Dam", state of extreme degradation of public stairwell.



Elizabeth Grant
School of Architecture + Design at Virginia Tech, Blacksburg

Growing Cities, Growing Roofs: Vegetative Systems' Response to Urban Runoff

Introduction

As cities transform ever more rapidly, architects find themselves negotiating new relationships between the manmade and natural environments. The direct incorporation of living vegetative systems in architecture has had a profound and growing impact on architectural and urban design communities worldwide.

Green roofs are widely implemented for their purported ability to both retain and delay roof runoff during storm events, thereby reducing impact on already overtaxed urban sewer systems. This research explores this particular capability through the testing of modular green roof systems installed in low-slope platforms constructed atop a test cell building at the Research and Demonstration Facility at Virginia Tech's campus in Blacksburg, Virginia.

Background

There has always been a complex relationship between the city and the garden. As far back as the mythical Hanging Gardens of Babylon, man has attempted to have his cake and eat it, too; to cultivate both human civilization and the natural world in the same physical location. The vegetated roof has been one response to this pervasive desire. Osmundson (1999), has presented numerous built projects which track this development through time. According to Osmundson, Medieval and Renaissance examples of roof gardens include the terraced Benedictine abbey of Mont-Saint-Michel, France, the Palazzo Piccolomini in Pienza, Italy, the Tower of the Guinigis in Lucca, Italy, and sites found in the city of Tenochtitlán, located in modern-day Mexico City. The common thread tying these projects together was the desire to exploit roofs as outdoor occupied space. Roof gardens were an indulgence of the wealthy, containing ornamental gardens often planted with imported or otherwise special plant varieties. He cites further examples of such gardens in Russian and German cities extending into the 1800s (Osmundson, 1999).

The tradition of highly articulated roof gardens continued in America's cities. Hotels, penthouse apartments and high-rise corporate structures of the era featured roof gardens as an amenity before the age of air conditioning, with the five green roofs of Rockefeller Center in New York being a well-known example. The age-old concept of the green roof as extended outdoor living space was also supported by two renowned and influential architects, Frank Lloyd Wright and Le Corbusier, who incorporated roof gardens into their design philosophies as well as some of their built work. The Great Depression, World War II and the post-war housing crisis stalled the construction of roof gardens in the U.S., which did not resume significantly until the late 1950s. At that time, the roof garden trend shifted toward large, often publicly accessible green roofs located above parking garages or other substantial structures in urban centers where land was at a premium (Osmundson, 1999).

Concurrently in the German-speaking countries of central Europe, the focus on the relationship between the manmade and the natural environment, while rooted initially in the counterculture, had a more profound impact on the mainstream design community than it did in North America. This widespread acceptance of "green" building principles is exemplified by the popularity of the work of Friedensreich Hundertwasser, who along with Joseph Krawina constructed an ambitious and high-profile housing project called the Hundertwasserhaus in Vienna, Austria. Hundertwasser was a strong proponent of introducing vegetation as a healing force in the city. He viewed himself as an "architecture doctor" who healed buildings created in the sterile, domineering method of the time. He did this through the reintroduction of nature in the form of "grass roofs, planting trees and woodlands on roofs, creeping plants on walls, and tree tenants" (Restany & Hundertwasser, 2011, p. 160). Hundertwasserhaus is a florid example of this approach, shown on the left in Figure 1.

While initially viewed as a marginal approach, this mentality has found its way into the mainstream of architectural practice. Now that the storm water mitigation and energy savings benefits of roof greening are beginning to be recognized, and the impact of buildings on the environment has been highlighted through green building initiatives, support for green roof technology can be found in the research, design and construction sectors. With the proliferation of metrics of sustainability, the literal greening of buildings has become a common strategy to both actually and metaphorically link city dwellers with their vegetated "neighbors". For example, a modern-day interpretation of the hanging garden can be found in Herzog & De Meuron's Fünf Höfe shopping center in Munich, shown on the right in Figure 1, with its thirty illuminated, irrigated vines (Barreneche, 2005). Architects have perhaps now begun to embrace the idea of integrating vegetation in buildings.

Researchers in turn have started to support this trend through investigations into the ecological benefits of vegetative systems. Dunnett and Kingsbury (2004) have detailed the process whereby researchers began to support this interest in the greening of the urban landscape through research into the ecological benefits of brownfields sites. In fact, they claim that early interest in extensive green roofing stemmed from studies investigating the benefits of natural colonization of plants on typical gravel roofs. Recent studies carry this investigation forward to evaluate contemporary green roof systems in terms of storm water reduction and delay.

Green Roof Runoff Volume Reduction

Green roofs can reduce and slow runoff from urban roofs, helping to prevent flooding, erosion, and combined storm water overflows (CSOs) that threaten to pollute waterways. Several North American studies have been published (DeNardo, 2003; K. Liu, 2004; K. Liu, & Minor, J., 2005; Monterusso, 2004; A. Moran, Hunt, B. & Jennings, G., 2004; A. Moran, Hunt, B. & Smith, J., 2005) discussing roof runoff volume reduction exhibited by green roofs as compared to control roofs. While a single-number coefficient predicting the amount of runoff retained by a green roof would be a helpful tool for designers, it is difficult to provide such a number due to the range of variables in these studies. These variables include the depth and configuration of the vegetative roof system, the slope of the roof, and the type of vegetation planted. Further complicating the creation of a single-point estimate is the variation in climate from site to site. The intensity, duration, and timing of storms all contribute to differing results. Additionally, cold weather affects the performance of green roofs, with less retention of rainwater occurring in cold versus warm months. Despite these complexities, the published studies have generally shown a marked difference between green and non-green roofs, with green roofs retaining between 50 percent and 100 percent of rainfall in various conditions. More study is needed to narrow this range in an effort to accurately predict the performance of specific vegetated assemblies. The ongoing work of this study aims to correlate climate data with runoff data to create an objective function capable of predicting green roof performance in a range of conditions.

Green Roof Runoff Delay

Green roofs have the capacity to reduce storm water peak flows by retaining rainfall for a short time, then releasing it. This capacity also means that green roofs have a potential impact on runoff warming in both urban and rapidly urbanizing areas. Runoff warming is an important environmental concern in terms of humans' impact on the biosphere, as increased stream temperatures cause problems for fish and aquatic insects. The results of literature addressing the impacts of storm water best management practices (BMPs) on stream warming (Galli, 1989; Wang & Kanehl, 2003) addresses issues related to the length of time water is held in various BMPs, and the propensity for watersheds to encounter problems with stream warming related to their degree of impervious cover. Some BMPs detain storm water for a period exceeding 12 hours, which can lead to elevated temperatures. Because water is not held for an extended length of time in a properly designed green roof (K. Liu, 2004), it would appear that its impact on runoff warming is minimized. The ideal green roof will slightly delay runoff to avoid contributing to peak flow conditions in watersheds, but not detain it long enough to cause problems with stream warming. Modern, extensive green roofs have often been touted as an urban strategy for storm water management. It would appear from the stream warming literature that their greatest advantage might be found in rapidly urbanizing areas at the fringes of cities, where they could be used to reduce peak storm water flows and keep the total impervious cover in the watershed below the critical threshold value beyond which aquatic organisms are adversely affected.

Purpose of Study

The degree to which green roofs provide roof runoff retention benefits has been explored by organizations such as the German Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e. V. (FLL) (2002), who published a guideline to help designers predict the performance of various types of vegetated systems. However, given the variability of climates worldwide, the tests done in Germany need to be replicated in a variety of other locations to strengthen and adapt findings to particular locales. The present research takes an experimental approach to evaluate the performance of modular green roofs of specific depths. The authors and their colleagues have erected five test platforms to study the effect of system depth and climate variables on the reduction of roof runoff during a two-year study period. This paper reports results from the first five months of data collection, from June 1 to November 1, 2011.

Study Setup

The experiment was designed to compare roof runoff rates from 2.4-meter-by-2.4-meter (8-foot-by-8 foot) plywood platforms sloped at 1:48 and covered with white reflective thermoplastic polyolefin (TPO) roof membrane and three different depths of modular green roofs: 152 mm (6 inches) deep, 108 mm (4.25 inches) deep, and 64 mm (2.5 inches) deep. These are referred to in this paper as "Deep", "Standard", and "Lite", respectively. A platform covered with modules with 108 mm (4.25 inches) of growing medium, but no plants, referred to here as "Medium-only", was installed so the research team could observe the difference the plants make in the functioning of the system. A control platform, with a TPO roof membrane but no modules, was also constructed. A weather station was assembled to record air temperature, relative humidity, photosynthetically active radiation, wind speed and direction, and rainfall. Figure 2 shows the placement of the platforms and equipment on the roof of the test cell building at the Research and Demonstration Facility at Virginia Tech.

Modular green roofs comprised of 0.3 meter-by-0.6-meter (1-foot-by-2-foot) interlocking black plastic trays all planted with the same mix of seven sedum species were chosen due to their local availability and ease of installation with a crew of unskilled volunteers. After completion of the platform construction and membrane installation in August 2010, the green roofs were installed on October 13, 2010 by a team of students and representatives from the supplier's organization. This experience was valuable for the students, who learned about construction and installation of vegetative roofs through their participation in this project.

Runoff from each of the five platforms was collected with a gutter at the edge of each platform running to a downspout routed to a large tipping bucket tied to a datalogger. The roof platforms are shown in Figure 3, with the Deep modules shown in the foreground. This paper presents runoff data for each platform for storm events occurring during the initial five-month study period.

Results

Runoff Volume Reduction

Runoff data from the five platforms were collected and tabulated from June 1 through November 1, 2011. 49 storms occurring during this period were recorded and categorized by total amount of rainfall. Storms with less than 1 mm (0.04 inch) total rainfall were excluded, as the number of tips occurring during these storms fell within the error margin of the tipping buckets, giving inconclusive results (n=13). The remaining storms were grouped as follows: light storms with at least 1 mm (0.04 inch) but less than 3 mm (0.12 inch) recorded rainfall (n=13); medium storms with at least 3 mm (0.12 inch) but less than 7 mm (0.28 inch) rainfall (n=10); and heavy storms with 7 mm (0.28 inch) or more rainfall (n=13). Figure 4 shows the percentage of rainfall retained for storms within each category, ranked in order from least to most total rainfall. The negative percentages resulted from the differing sensitivities of the large tipping buckets used at the platforms versus the tipping bucket rain gauge used to measure rainfall. The tipping buckets at the platforms tipped approximately three times for every one time the rain gauge tipped, so it was possible, especially in a light rain, for the platforms to tip more often, and earlier, than the rain gauge.

Figure 5 shows the total runoff for each platform for light, medium, and heavy storms, and the overall totals for the study period.

Runoff Delay

The results of two heavy storms with a similar total runoff volume are shown in Figures 6 and 7. The more intense storm ending July 5, 2011 occurred over a 4 hour and 40 minute period, and the less intense storm ending November 12, 2011 occurred over a 20 hour and 45 minute period.

Discussion

Runoff Volume Reduction

In total, the Deep, Standard, Lite and Medium-only platforms retained considerably more incident rainfall during the study period than a control platform covered only with a white reflective roof membrane. In general, the deeper systems exhibited more retention capacity than the shallower systems. Further, the total rainfall volume of the storm affected the retention properties of the green roofs, with more retention capacity as a percentage of rainfall exhibited in light storms than in heavier storms.

One initial observation of the overall results was that the retention values aligned surprisingly well with the annual coefficients of discharge assigned to green roof systems of varying depths by the German FLL (2002). While the FLL coefficients were based on a specific reference rain and other prescribed conditions, they are useful as a rough guideline of what to expect of each system. According to the FLL, a 152 mm (6 inch) deep roof will retain 60 percent, a 108 mm (4.25 inch) deep roof will retain 55 percent, and a 64 mm (2.5 inch) deep roof will retain 50 percent of the annual incident rainfall. This can be compared to the 58, 57 and 48 percent retention exhibited in this study. The Medium-only platform performed in line with its depth category, retaining 52 percent of rainfall. These results will be revisited after the study period reaches the one-year mark.

Perhaps surprisingly, the Medium-only platform generally retained more water than the Lite platform. Similar observations were made in a paper by VanWoert et al. (2005), where Medium-only and vegetated site-built (non-modular) green roofs were compared. This outcome may point to the fact that the depth and other properties of the growing medium are critical variables in the storm water mitigation potential of green roofs, perhaps as critical as the presence of the vegetation itself. Further hypothesis testing will be necessary to understand this finding. Another unexpected result was the frequently superior performance of the Standard modules when compared with the Deep modules on a per-storm basis, and the relative closeness in performance of the two in the overall total. It was expected that the additional 70 mm (2-3/4 inches) of medium in the deep system would have had a greater impact on the outcome. Statistical analysis will be conducted on the data after the first complete year of collection to determine trends related to this phenomenon and propose a possible explanation.

Viewed in aggregate, the vegetated platforms and the Medium-only platform retained 90 percent or more of the rainfall for the light and medium storms. It was only in the heavy storms that the performance of the vegetated and Medium-only platforms began to decline considerably. In particular, the two heaviest storms shown in Figure 4, with 53.3 mm (2.10 inches) and 85.1 mm (3.35 inches) total rainfall respectively, showed a sharp reduction in the treatment platforms' performance. In the future,

with a larger data set, it will be possible to determine at what point the runoff volume reduction potential of green roofs begins to substantially degrade.

Runoff Delay

In storm water management, reduction of peak flows is often as critical a parameter as overall reduction of storm water volume. While a comprehensive data analysis has not yet been performed on this limited five-month data set, investigation of two storms with similar total rainfall is illustrative of the delays in runoff exhibited by the various systems. Figure 6 shows that in the more intense storm, the delay between the spike in rainfall and the runoff from the first treatment platform (the Lite modules in this case) was only about 10 minutes. In the less intense storm shown in Figure 7, the delay was close to three hours between the first substantial increase in rainfall and the resulting increase in runoff from the Medium-only platform. Investigation of the interaction of these results with variables such as the length of time between storms will be pursued as this study continues.

Conclusions and Continuation

Vegetated roofs are complex biosystems that interact with a range of climate factors and other environmental inputs. While the early results of this study are promising, the interaction of climate variables, along with the characteristics and spacing of individual storms, will be investigated to better explain the outcomes. The continuing research effort, to be conducted over two years, will correlate these findings with weather data to create an algorithm useful for predicting the performance of modular vegetated roof systems in future projects. The ultimate goal of the research is to help architects more accurately predict the benefits of these systems when designing urban structures. In knowing how vegetated systems perform, architects may begin to support a healthy equilibrium between natural and manmade systems in cities.

Bibliography

Barreneche, R. A., *New Retail*, Phaidon, New York, 2005.

DeNardo, J. C., Jarrett, A. R., Manbeck, H. B., Beattie, D.J., Berghage, R. D., *Stormwater detention and retention abilities of green roofs, World Water & Environmental Resources Congress 2003 and related symposia proceedings of the congress*, Philadelphia, PA, 23-25 June 2003, 1639-1645, 2003.

Dunnett, N., & Kingsbury, N., *Planting green roofs and living walls*, Timber Press, Portland, 2004.

Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e. V. - FLL, *Guideline for the Planning, Execution and Upkeep of Green-Roof Sites (January 2002 ed.)*, Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e. V., Bonn, 2002.

Galli, J., *Thermal impacts associated with urbanization and stormwater management best management practices*, 1989.

Liu, K., Engineering performance of rooftop gardens through field evaluation, Interface, February, 4-12, 2004.

Liu, K., & Minor, J., *Performance evaluation of an extensive green roof, Proceedings of the greening rooftops for sustainable communities conference*, Washington, D.C., 4-6 May 2005, 385-398, 2005.

Monterusso, M. A., Rowe, D. B., Rugh, D. L., & Russell, D. K., *Runoff water quantity and quality from green roof systems*, Acta Hort, 639, 369-376, 2004.

Moran, A., Hunt, B. & Jennings, G., *A North Carolina field study to evaluate greenroof runoff quantity, runoff quality, and plant growth, Proceedings of the greening rooftops for sustainable communities conference*, Portland, Oregon, 2-4 June 2004, 446-460, 2004.

Moran, A., Hunt, B. & Smith, J., *Hydrologic and water quality performance from greenroofs in Goldsboro and Raleigh*, North Carolina, Proceedings of the greening rooftops for sustainable communities conference, Washington, D.C., 4-6 May 2005, 512-525, 2005.

Osmundson, T., *Roof gardens: history, design, and construction* (1st ed.), W.W. Norton, New York, 1999.

Restany, P., & Hundertwasser, F. Hundertwasser, Parkstone Press, New York, 2011.

VanWoert, N. D., Rowe, D. B., Andresen, J. A., Rugh, C.L., Fernandez, R. T., & Xiao, L., *Green roof stormwater retention: effects of roof surface, slope, and media depth*, Journal of Environmental Quality, 34, 1036-1044, 2005.

Wang, L., & Kanehl, P., *Influences of watershed urbanization and instream habitation on macroinvertebrates in cold water streams*, Journal of the American Water Resources Association , 39, 1181-1196, 2003.

Legend

Figure 1 – Hundertwasserhaus, Vienna at left and Fünf Höfe, Munich at right. Photos by Elizabeth Grant

Figure 2 – Experimental setup at Virginia Tech. Photo by Elizabeth Grant

Figure 3 – Roof platforms at Research and Demonstration Facility, Virginia Tech

Figure 4 – Percentage of rainfall retained by ranked by total rainfall

Figure 5 – Percentage of rainfall retained by different storm categories

Figure 6 – Cumulative hydrograph of 25.1 mm (0.99 inch) storm ending July 5, 2011

Figure 7 – Cumulative hydrograph of 26.7 mm (1.05 inches) storm ending November 12, 2011

Figure 1

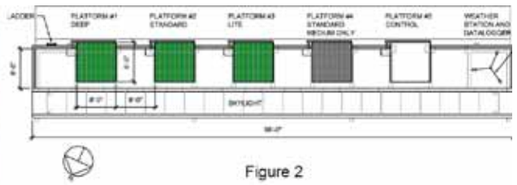


Figure 2

Figure 3

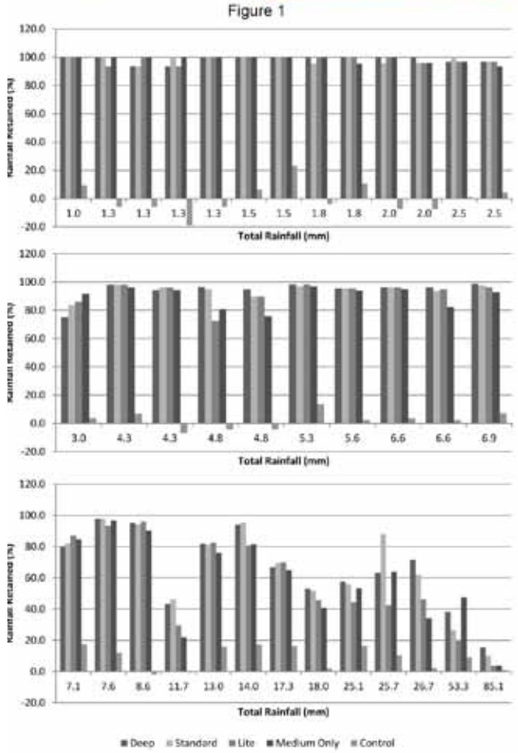


Figure 4

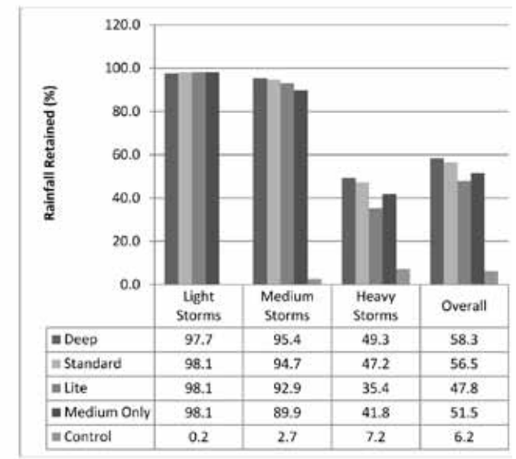


Figure 5

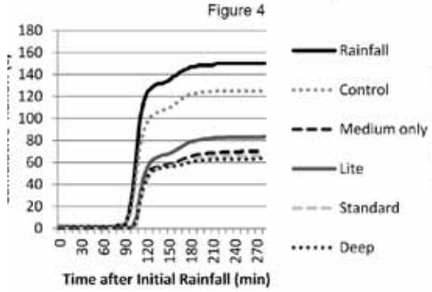


Figure 6

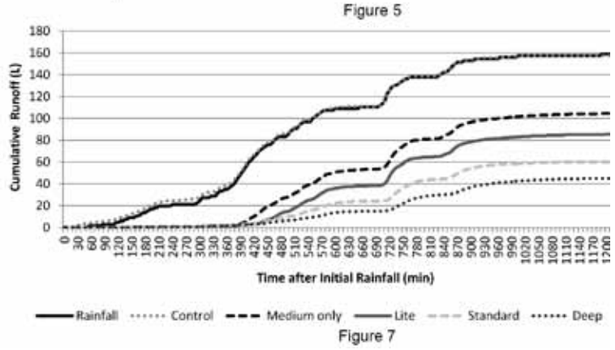


Figure 7

Kyoung-Hee Kim
UNC Charlotte, U.S.

Sustainable façade technologies: High-rise building retrofittinge

1. Introduction

According to the U.S. Energy Information Agency (EIA), buildings use 71% of the electricity in the United States and that number will rise to 75% by 2025. Buildings in urban areas account for $400 billion of operational energy cost annually, and buildings in dense cities like New York City consume 80% of the city's total energy, despite the fact that New York City, for example, takes up only 2% of the area of New York State (Foy et al., 2008). Urban buildings constructed before 1970 are subject to higher energy loss through inadequate building envelopes, because of a lack of building energy code enforcement and incentives to save energy. Further, every building is subject to physical and functional obsolescence due to the limited durability of construction materials. The duration of a retrofitting cycle for an office building in urban areas is typically 25~30-years.
A key to reducing energy consumption in urban buildings is to retrofit façades and to upgrade building service systems with high efficiency (e.g., Heating, Ventilation and Air Conditioning (HVAC) and artificial lighting). Façade retrofitting is the most cost effective option and provides excellent opportunities to enhance economic benefit, ecological sustainability and occupants' well-being. Retrofitting projects in urban areas represent a large percentage of the overall construction market, which can create job opportunities. The Center on Wisconsin Strategies reported that an average of 10 jobs can be created from a $1 million retrofit project (Walsh et al., 2009). Further, façade retrofitting also offers increased marketability and growth value and provides a good image to public. In addition to the economic benefits, façade retrofitting increases the energy efficiency of a building, thus reducing the building's energy consumption, operational costs and environmental impact over the course of the building's life cycle. Other benefits from retrofitting the façade would be to provide healthier indoor air quality and increased occupant satisfaction and work productivity.
The paper focuses on the design process and energy performance assessment of a retrofit project in New York City that the researcher was involved in. The building in the case study was built in 1950 and is a 42-story high-rise consisting of a commercial Podium, office Tower and residential Block.
The paper discusses sustainable façade technologies and potential assembly methods for façade retrofitting applicable to high rise buildings in urban settings. The study also addresses the ecological and economic implications of façade retrofitting.

2. Retrofitting façades

2.1 Façade Technologies

Various façade technologies are available in the building construction market and have been implemented on façade retrofitting. Building façade improvements associated with reducing building energy consumption focus on three areas: 1. Heat transmission (U-factor), 2. Solar heat gain and 3. Air infiltration. A low-e coated insulated glass unit (IGU) is the most cost- effective way to improve the U-factor of a building façade.
Further, a spandrel panel consisting of spandrel IGU and sufficient batt insulation behind it offers good insulation for opaque façade zones. Depending upon the types of infilled air in the cavity of an IGU, the U- factor of an IGU can be further improved. The three inert gases include argon, krypton and xenon.
For example, an IGU with an air filled cavity offers a U-factor of 1.70 W/m^2-K while an IGU with argon, krypton and xenon gases offers 1.36 W/ m^2-K (a 20% U-factor improvement compared an to air filled IGU), 1.25 W/m2-K (a 26% improvement) and 1.14 W/m2-K (a 33% improvement) respectively.
Another way of improving the U-factor of an IGU is to apply a vacuum in the cavity instead of filling it with air. An IGU with a 1mm vacuum cavity offers 1.70 W/m^2-K. An aerogel infilled IGU is another façade technology that can improve a building's U-factor. It is typically used for skylight applications because of the translucency of the aerogel. The inert gases, vacuum and aerogel technologies require additional costs and their long-term performance are of primary concern because over time infilled gases or vacuums tend to leak out of the cavity of an IGU.
Another façade technology for reducing building energy consumption is to control unwanted solar heat gain. Examples of controlling solar heat gain include spectrally selective low-e coating, reflective coating and tinted glass. Depending on the coating types and colors of the tinted glass, the solar heat gain coefficient (SHGC) ranges from 0.2 to 0.4. External louvers or internal louvers integrated within the IGU cavity can further reduce solar heat gain, as do colored interlayers of laminated glass. An electrochromic IGU is also available for active solar controls by using electric current to change the opacity of the IGU.
Lastly, air infiltration through building façades significantly affects building energy consumption. Air infiltration refers to the flow of outdoor air into a building through cracks and unintentional openings. Infiltration can meet the code-specified values through good practices. A target infiltration rate for an office building, for example, is set at 10 m^3/h-m^2 or 0.25 ACH (air exchange per hour).

2.2 Retrofitting Façades in Urban Settings

The case-study building has a conditioned floor area of 85,000 m^2 and a volume of 11,200,000 m^3 within 46 floors. The building is located in New York City and was built around 1950. It is clad with low performance windows and veneer bricks with batt insulation behind it. The building consists of a commercial Podium, office Tower and residential Block. According to an interactive energy map, the building consumes 272 kWh/m^2 of electricity and 94 kWh/m^2 of fuel annually, totalling 366 kWh/m2. The retrofitting action in this project involved in the interventions on the building envelope constructions only without making changes on building service systems (e.g. HVAC and artificial lighting systems). Given the site conditions and urban setting, there are several issues to be considered when retrofitting building façades. Façade retrofitting poses issues of access to the building site (physical and time schedule) that affect façade replacement. A number of issues need to be addressed with the relevant city and state agencies such as demolition removal, delivery of materials to the site, pedestrian safety, temporary sidewalk closures & re-routing of pedestrian flow, protection of interiors and location and loading of temporary hoisting systems (material lifts & worker elevators). Within each phase of façade replacement, the façade and site have different conditions that need to be accommodated to facilitate minimal disruption to the building interior as well as to acknowledge the site logistics of access, safety and delivery of materials.
Prefabricated and unitized façade systems were considered for cost and scheduling benefits.
This type of system has become popular in cities with a dense high-rise urban environment where available space is limited for material storage and system assembly. Prefabricated façade assembly offers multiple advantages in the areas of labor cost reduction, speedy installation, quality control and construction waste reduction at the job site.

Phase I – Podium

The Podium of the case study building requires site-assembled, fixed aluminium windows covering the building envelope due to the large size of the storefront's glass panels. The proposed façade system consists of an insulated glass unit (IGU) with high performance low-e coating and thermally broken aluminium frames. The original window was installed in the 1970s and it consisted of an IGU with low performance, low-e coating (hard low-e), which offered a poor U-factor and high SHGC, resulting in more energy consumption from heating and cooling the space. Figure 1 shows the location of the podium's glazing walls, which is the first phase of retrofitting the façade. Fig.1

Phase II – Tower

The re-cladding of the Tower presents a unique challenge in that the façade demolition must be done in such a way as to maintain the weather- enclosure of the building in order to protect the interior environment as well as to prevent wind pressure from entering the building and potentially damaging existing and/or newly installed façade panels. The proposed system consists of a unitized aluminium and glass curtain wall system. Glass curtainwall includes a floor-to-ceiling IGU with a high performance low-e coating (soft low-e), which offers an improved U-factor and low SHGC while maintaining a high level of visible light transmittance (VLT). The Tower was to be re-cladded with vision IGU and spandrel IGU with sufficient batt insulation. Figure 2 shows the Tower portion and curtainwall re-cladding location for the second phase of retrofitting the façades. Fig.2

Phase III – Block

The proposed re-cladding of the Block entails cladding over the existing façade with new metal panel cladding so it presents fewer logistical challenges than the Tower. The façade work was to be done exclusively from the exterior on traditional temporary suspended work platforms hoisted from the Block's series of lower roofs. The window consists of a high performance IGU with thermally broken aluminium framings and an opaque wall that is covered with metal recladding. Figure 3 represents the last phase of retrofitting the Block portion. Fig.3

3. Energy performance verification

3.1 Energy Analysis Set-up

In order to understand the energy conservation potential from the façade retrofitting, an energy performance simulation was carried out both for the existing building with its low performance building façades and the retrofitted building with its upgraded façade. The building mass was built in the Revit Massing platform, and a preliminary energy simulation was conducted using a Revit based simulation tool called Vasari, which records the climate data for New York City on an hourly basis. The Vasari simulation model requires information about building programs, operational schedules, building mass, building envelope construction and airtightness, window-to-wall ratio (WWR), and thermal and perimeter zones.
The simulation model was calibrated against the monitored data on annual electricity and gas consumption provided by an interactive energy consumption map for NYC as shown in Figure 4. The existing building consumes an energy intensity of 366 kWh/m^2 consisting of 272 kWh/m^2 electricity and 94 kWh/m^2 (322 kBtu/m2). Fig. 4

After the simulation was calibrated against the building's actual energy consumption, the yearly energy consumption of the existing and the retrofitted buildings were analysed in Vasari. The building operation schedule was set to be a typical office working schedule. The WWR was 40% for both the existing and retrofitted buildings. The fenestration of the existing building was set to be an assembly U-factor of 4.26 W/m2-K, an assembly SHGC of 0.55 and an assembly VLT of 65%, based on the actual site's condition. The retrofitted building was assumed to have an assembly U-factor of 2.26 W/m^2-K, an assembly SHGC of 0.23 and an assembly VLT of 50% based on an IGU with a high performance low-e coating. These assembly values were estimated in accordance with ASHRAE Fundamental 2009. The opaque wall, or spandrel curtainwall, was assumed to be low insulation for the existing building and high insulation for the retrofitted building. An average lighting power of 11 W/m^2 was used to calculate the lighting energy. The air tightness of the construction was assumed to be 0.5 ACH for the existing building and 0.25 ACH for the retrofitted building.
The Vasari model carries out the parametric energy consumption analysis by changing the WWR, façade construction and air tightness. Figure 5 shows the simulation model set up in Vasari. Fig. 5

3.2 Preliminary Analysis Results

The preliminary analysis results reveal that the façade retrofitted with a high performance IGU and spandrel construction saves around 20% more energy annually, which equates to an approximate energy cost savings of $80,000 per year.
The lower SHGC of the retrofitted building reduces electricity usage by 10% through blocking greater solar gain during the summer. The improved U-factor and airtightness of the retrofitted building further reduces natural gas consumption by 47% compared to the existing building. Both the existing and retrofitted buildings allow for an ample amount of daylight so as to maintain illuminance levels of 500lux around the interior perimeters. As a result, there is a marginal difference in the artificial lighting load between the existing and retrofitted buildings. A high performance low-e coating in an IGU is a spectrally selective low-e coating that offers high daylight transmittance and low solar heat admittance.

Table 1 shows comparisons between the energy usage estimates from the Vasari simulation for the existing and retrofitted buildings.

Table 1 Comparison of energy usage intensity comparison

	Actual EUI	Simulated EUI (existing building)	Simulated EUI (retrofitted building)
Electricity kWh/m^2	272	250	225
Gas kWh/m^2 (kBtu/m^2)	94 (322)	106 (363)	56 (192)
Total EUI (kWh/m^2)	366	356	281

For the existing building, the breakdown of energy consumption by end-use includes 42% for ventilation and air conditioning, 20% for lighting and 38% for miscellaneous equipment. The energy consumption by end-use of natural gas consists of 83% for heating and 17% for domestic hot water. For the retrofitted building, the breakdown of energy consumption by end- use contains 35% for ventilation and air conditioning, 23% for lighting and 42% for miscellaneous equipment. The energy end-use of the natural gas consumption includes 67% for heating and 33% for domestic hot water. Figure 6 shows the break-down energy consumption of the energy end-users.
Further, the life cycle impact assessment indicates that during a 30-year operational period, the existing building produces approximately 12,100 tons of carbon emissions while the retrofitted building would generate 11,900 tons of carbon emissions. As a result, the retrofitted building would reduce the CO_2 emissions by 200 tons over a 30 year period. The 30-year life cycle energy cost was estimated to be $52,500,000 for the existing building and $42,200,000 for the retrofitted building, based on the unit energy cost of $0.17/kWh and $0.98/Therm in New York City. The photovoltaic (PV) systems mounted on the roof can generate 5%~10% of the building's total power needs. Façade-integrated PV systems can further increase on-site energy generation. Fig 6

4. Conclusion

The study involves retrofitted interventions on the building façades of a multi-use building in New York City.
Various façade technologies are available for façade retrofitting, all of which focus on improving the primary energy attributes of a building's façade in the areas of heat transmission, solar heat gain and air infiltration. Prefabricated façades have become a popular installation method in urban settings because they offer multiple advantages such as a reduction in labor costs, speedy installation, quality control and a decrease in on-site construction waste. Retrofitting façades in urban areas should cause minimal disruption to the buildings' interiors as well as acknowledging the site logistics of access, safety and delivery of materials.
The energy saving potential and environmental impact of the retrofitted building was presented and compared with the energy consumption of the existing building. The energy simulation results clearly show that it is possible to significantly reduce a building's energy consumption and environmental impact by upgrading the façade using high performance façade technologies. These high-performance façades result in substantial reductions to both electricity consumption and thermal energy use. The building retrofitted with high performance façades reduces energy consumption by 20% compared to the existing building. The retrofitted façade also cuts down on annual operational costs by $80,000 and lowers the annual CO_2 emissions by 6 tons. The photovoltaic (PV) systems integrated with building envelopes can further reduce the energy consumption and CO_2 emissions, providing 5%~10% of total energy needs of the existing building. An energy consumption analysis during the design process could be an important reference for an energy- efficient retrofitting project. This research could give architects and engineers the guidelines and information necessary to design a retrofitted building in urban areas.

Kyoung-Hee Kim
UNC Charlotte, U.S.

Bibliography

American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc. 2007. *ASHRAE 90.1 Energy Standards for Buildings except Low-rise Residential Buildings* (I-P edition). Atlanta: ASHRAE, Inc.

American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc. 2009. *ASHRAE Fundamentals* (I-P edition). Atlanta: ASHRAE, Inc.

Autodesk. 2012. Autodesk Revit (Version 2012) [Computer software]. San Rafael: Autodesk.

Autodesk. 2012. Autodesk Vasari (Version T2.3) [Computer software]. San Rafael: Autodesk.

EIA. 2008 Emissions of Greenhouse Gases in the United States. U.S. Energy Information Administration. U.S. Department of Energy.

Energyplus Weather Data. 2010 http://apps1.eere.energy.gove.

Foy, D. and Rogers, J. 2008. Efficiency Cities: A Preliminary Assessment of Potential in Boston, Cleveland, Minneapolis, Philadelphia, Pittsburgh, St. Paul, San Francisco and Seattle, (Living Cities report).

Institute for Sustainable Communities. 2011. Scaling up Building Energy Retrofitting in U.S. Cities. Retrieved from http://www.iscvt.org/who_we_are/publications/Gr een_Boot_Camp_Resource_Guide.pdf

Lawrence Berkeley National Laboratory. 2001. Window (Version 5.2) [Computer software]. Berkeley, CA: LBNL.

Lawrence Berkeley National Laboratory. 2006. THERM (Version 5.2) [Computer software]. Berkeley, CA: LBNL.

National Fenestration Rating Council, Inc. 2004. NFRC 100-2004: *Procedure for determining fenestration product U-factors.* MD: National Fenestration Rating Council. http: nfrc.org.

National Fenestration Rating Council, Inc. 2004. NFRC 201-2004: *Procedure for interim standard test method for measuring the solar heat gain coefficient of fenestration systems using calorimetry hot box methods*. MD: National Fenestration Rating Council. from http: nfrc.org.

Walsh, J. and White, S. 2008. *Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy.* Retrieved from http://www.cows.org/pdf/rp-greenerpathways.pdf.

Legend

Fig.1 Location of Podium re-cladded with high performance glass storefront

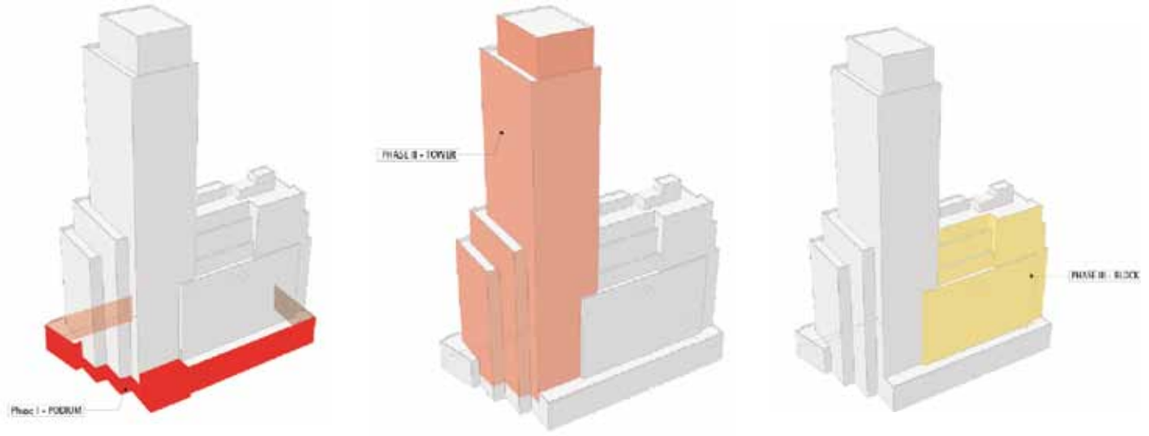
Fig.2 Location of Tower re-cladded with glass curtainwall

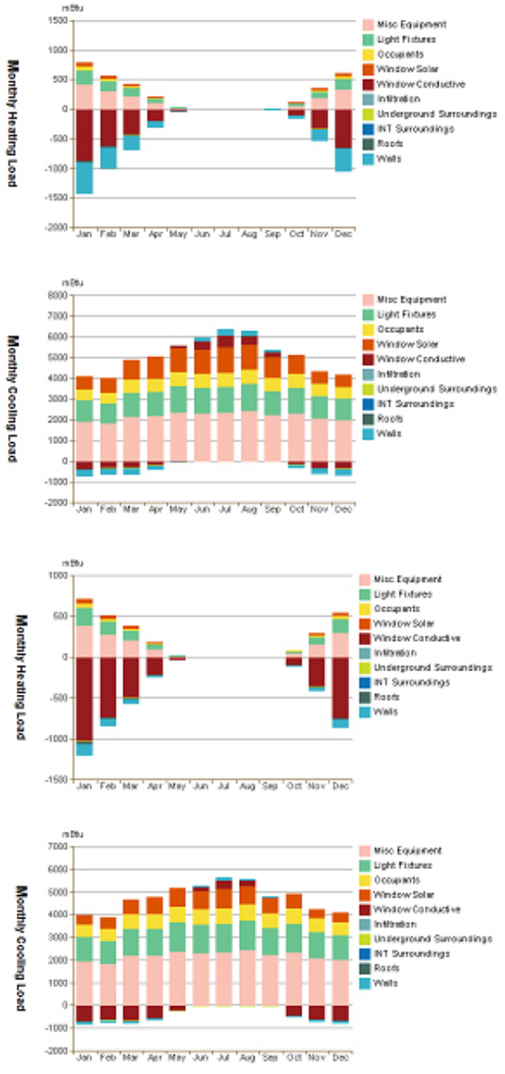
Fig.3 Location of Block re-cladded with high performance IGU and metal recladding

Fig. 4 Energy consumption of the case study building

Fig. 5 Vasari simulation model set-up of the existing building (a) and retrofitted building (b)

Fig. 6 Energy end-users of the existing building (a) and retrofitted building (b)





Monica Lavagna - Paco Melià - Paolo Pileri - Viktoriya Sendyureva
Politecnico di Milano, Italy

Urban transformation, energy consumption and CO_2 emission

Abstract

Land-use changes resulting from urban expansion and transformation processes have important consequences on the environment. Soils provides a wide range of ecological services until they remain in their natural or semi-natural (rural) state. Urbanization processes determine, on one hand, a reduction of ecosystem services sustaining human activities (Pileri 2010, 2011), like the supply of resources (such as water, biomass, fossil fuels, minerals) and the absorption of emissions (into air, water and soil), and, on the other hand, an increase of resource consumption and emissions deriving from human activities taking place in the new urban areas. Qualifying and quantifying the environmental impacts associated to urban transformation is crucial to guide land-use planning and identify sustainable strategies for urban development.
This paper presents preliminary results of an assessment of different urban transformation scenarios, associated to different planning choices, and highlights the impacts generated by the consequent land-use changes. In particular, the analysis evaluates the environmental impact of a change from natural land use (forest land and cropland) to urban land use for a reference area of 1 ha located in Lombardy (Milan hinterland) and two settlement scenarios (characterized by different population densities). Impacts are quantified in terms of energy consumption and CO_2 emissions, related also to the reduction of the carbon stock. It is in fact known that soils can act as CO_2 reservoirs (Del Galdo 2003, Liski 2002).

The set of scenarios considered accounts for a range of working hypotheses regarding:
• the original land use (carbon absorption and stocking as a function of the initial land cover and use)
• the final land use (different settlements as function of residential building type solutions, from single-family houses to multifamily houses)

Different assumptions are also considered to quantify the environmental impacts, with respect to system boundaries:
• from the spatial viewpoint, in relation to the geographical area considered (from the area affected by the specific land-use change to the global impacts)
• from the temporal viewpoint, in relation to the considered time horizon (the settlement phase, the use phase or the entire lifespan of the buildings).

A critical discussion of the conceptual framework on which the analysis is based provides useful insights for a deeper understanding of the environmental impacts of urban transformation. At the present time, carbon balance is not a key indicator in urban decision-making, while it should be considered from the very beginning of the planning process.

Objectives of the assessment and settlement scenarios

The assessment is based on illustrative scenarios differing in terms of population density and building type. A first set of scenarios considers a low density settlement (40 persons/ha), which characterizes extensive urban solutions, consuming large extensions of land and incline to generate urban configurations typical of urban sprawl (Frenkel 2008). A second set of scenarios considers a settlement with higher population density (400 persons/ha) living in multi-family buildings. The density ratio between the two sets of scenarios (1:10) allows an easy comparison of the final results.

As for the low-density scenarios, we considered two alternative settlement solutions, differing with respect to the building type:
• 10 single-family houses with private garden, isolated, two-storey with a total floor area of 200 m^2, each one destined to a 4-person household;
• 10 single-family houses with private garden, with two sides in common with the adjoining houses, two-storey, with a total floor area of 120 m^2 and destined to a 4-person household.

As for the higher-density scenarios, we considered the following two alternative solutions:
• 4 buildings in line, with common green area, assuming that the aggregation consists of 6 apartments per floor (2 of 40 m^2 for two people and 4 of 80 m^2 for 4 people), for a total of 20 people per floor, and a total of 5 floors (100 persons in each building);
• 2 towers, with common green area, assuming that the aggregation consists of 6 apartments per floor (2 of 40 m^2 for 2 people and 4 of 80 m^2 for 4 people), for a total of 20 people per floors, and a total of 10 floors (200 persons in each building).

All scenarios consider the presence of an access road to buildings, consisting of two lanes, one for each direction, and sidewalks. In all scenarios the land free from building, gardens and streets is considered to be kept in its original state, namely forested land.

Impacts indicators

Currently there is a very heated debate concerning the high consumption of soil that determines urban sprawl (Alberti 2005, Frenkel 2008, Gennaio 2009). The assessment presented in this paper aims to highlight (even if as a purely illustrative and incomplete example) the consequences of different settlement patterns, not only in terms of land consumption, but also in relation to the environmental impacts of human activities associated with land use change.
The selected impact indicators are energy consumption and CO_2 emissions, since these are the two most popular indicators and the object of attention in environmental policies involving public administrations. In particular, the reduction of CO_2 emissions is currently a priority of the "Covenant of Mayors"fs. To assess energy consumption and CO_2 emissions we adopted a life-cycle perspective, thus accounting for impacts at the global scale associated with the entire life cycle of materials and components. In particular, we quantified emissions in terms of CO_2 equivalent (i.e. considering all greenhouse gas emissions, not just carbon dioxide), and evaluated energy consumption considering also indirect energy (i.e. energy expenditures along the energy supply chain).

Impact assessment of different system boundaries

The evaluation was performed considering different system boundaries (with respect to time and space), to illustrate how results are influenced by the underlying assumptions and show that a simplified approach, restricting the boundaries of the system to reduce the complexity of the assessment, can lead to underestimating actual impacts compared with a more comprehensive assessment considering all the impacts triggered in space and time by the human action, especially on a regional scale.

Two different system boundaries are considered:
• the local impact generated within the perimeter of the area (1 ha) over a time horizon of 30 years
• the global impact, determined from a land use change confined within the same perimeter and over the same time horizon, but including the chain of processes involved in the entire life cycle.
For example, as for energy consumption in the use phase of buildings, we considered not only energy consumptions and $CO_{2\text{-}eq}$ emissions occurring on-site (direct energy), but also those associated with the extraction, production and transportation of energy sources (indirect energy) from a life-cycle perspective, including environmental impacts outside the analyzed area.
As for the construction phase of the settlement, we considered the loss of carbon stocks and CO_2 absorption caused by overbuilding, and extended the boundaries of the system from those of the settlement considering energy consumption and $CO_{2\text{-}eq}$ emissions associated with the extraction, manufacturing and transportation of materials and components (again from a life-cycle perspective), including environmental impacts outside the analyzed area.

In synthesis, we estimated the following:
• $CO_{2\text{-}eq}$ absorption and storage associated with an area of 1 ha of forest;
• loss of absorption of $CO_{2\text{-}eq}$ associated with cement (buildings and roads) for the settlement of 40 or 400 people (in 4 cases of settlement) in an area of 1 ha;
• energy consumption and $CO_{2\text{-}eq}$ emissions associated with the use phase of buildings (4 settlement scenarios) for heating (system boundaries referring to the perimeter of the area);
• energy consumption and $CO_{2\text{-}eq}$ emissions associated with the use phase of buildings (4 settlement scenarios) for heating (system boundaries including also indirect energy over the whole life cycle);
• energy consumption and $CO_{2\text{-}eq}$ emissions associated with the construction of the settlement (4 settlement scenarios) for buildings and roads, always encompassing the entire supply chain-production of building materials from a life-cycle perspective.

Evaluation of carbon stocks and fluxes associated to the original land use

For our purposes, we consider for original land use a forested land (as a very rough approximation, we assume that forested land and cropland are similar from carbon point of view). Carbon dynamics in forested land are mainly determined by primary production, death and decomposition processes. The major carbon stocks are three (IPCC 2006): living biomass (above and below-ground), including roots, stems, branches and leafs; dead organic matter (wood and litter) lying in various states of decomposition above the soil; and organic matter in the soil, including organic and mineral soils. Carbon fluxes include absorption by photosynthesis and emission through autotrophic and eterotrophic respiration, decomposition, and biomass losses due to natural (fires, windstorms, floods or pest outbreaks) and anthropogenic (commercial felling for timber or energy production) causes.
In Lombardy, forests cover ca. 620000 ha, accounting for about 26% of the total surface of the Region. In this work, we use the estimates reported by the recent "Rapporto sullo stato delle foreste in Lombardia" (ERSAF 2011), which assessed average carbon stocks and fluxes for forested land of Lombardy. In particular, we use the figures relevant to the Milano Province (Table 1).

Croplands in Lombardy cover almost ca 985000 ha, representing about 41% of the surface of the Region. The differences from forest and cropland in carbon stock are not so relevant. The average organic carbon in the first 30 cm of cropland soils of Lombardy is 57 tC/ha (ERSAF 2008).
Natural carbon dynamics in croplands are structurally similar to those of forested land. However, there are additional carbon fluxes including the carbon removed by harvest and the emissions from fossil fuel consumption related to cropping practices, fertilization and pesticide use. It is still debated if European croplands act as carbon sources or sinks (see e.g. Ciais et al 2010, Osborne et al. 2010). Recent work suggests that ecosystem fluxes (i.e. excluding emissions from fossil fuel consumption) are approximately carbon neutral, although very sensitive to management measures such as tillage practices. Due to the difficulty of obtaining reliable estimates of carbon fluxes associated to croplands, in this work we did not consider cropland as a possible original land use.

Evaluation of the energy consumption and $CO_{2\text{-}eq}$ emissions related to different settlement scenarios: the construction phase

To calculate the energy consumption and CO2-eq. emissions associated with the construction of buildings were assumed literature average values (Lavagna, 2008; Lavagna, 2011) in relation to different parts of the building (vertical envelope, roof, inferior floor, internal floors, pillars), assuming traditional constructive solutions, with attention to meet the Italian legislation on building energy saving (EPBD, D.Lgs. 311/06, Presidential Decree 59) from the point of view of the thermal transmittance of the envelope (we have assumed envelope solutions which comply the limit values of the thermal transmittance of climatic zone E). The foundations have been associated with the calculation of the inferior floor. For vertical envelope we have assumed a value representative of an average between the opaque closure and the windows (assuming a minimum incidence of windows, tied to compliance with the ratio for natural ventilation and lighting). For the structure in elevation was calculated an average incidence of the pillars in relation to the building area, while the structural floors are already included in the calculation of the inferior floor, the roof and internal floors.

Although it have been assumed for the calculations average values, which therefore may have a considerable deviation based on the change of construction technology assumed or of materials chosen, the value of the results is not compromised, since the objective of the paper is check the impact of settlement choices and different form factors of the buildings and, therefore, it is reasonable to assume a fixed value of reference with respect to the constructive choices to operate the comparison with the same construction technique reference.
It is important to underline that the numbers of results cannot be assumed as absolute numbers, but only in comparative terms. In fact, many elements are missing in the count.
For example we have not considered the infrastructure, at the scale of the neighborhood (sewers, water supply, etc.) and at the scale of buildings (heating, plumbing, electrical system, elevators, etc.). We have not counted the vertical internal partitions. Were not considered underground spaces, for example garages, which would alter significantly impacts. Overall, therefore, the assessed impacts are understated, compared to a full assessment of all aspects.

Evaluation of the energy consumption and $CO_{2\text{-}eq}$.emissions related to different settlement scenarios: the use phase

To evaluate the energy consumption and $CO_{2\text{-}eq}$. emissions related to the use phase, we referred to the regulatory limits. In Italy the Legislative Decree no. 311/06 requires, for residential buildings, limit values of primary energy demand for winter heating. The limit values are expressed as a function of degree-days and the ratio S/V. To the degree days were taken as reference the degree days in Milan (2400). They we calculated the ratios S/V for the four types of building.
It is important to underline that having considered the energy consumption related to the winter heating does not exhaust the total energy consumption related to the use phase of buildings. It should be counted even the energy consumption related to electricity consumption for lighting and appliances and the possible consumption of energy for hot water, summer cooling or mechanical ventilation. Overall, therefore, the assessed impacts are understated, compared to a full assessment of all aspects.

Results

The final results were compared according to normalize with respect to m^2 of living area and with respect to the people settled in the different hypotheses.

The results normalized with respect to the living area of the buildings (Table 2) show:
• the role of the form factor of the buildings on impacts both of the construction phase (4.4 GJ/m2 for the isolated single-family house, 4.1 GJ/m^2 for townhouses, 2.8 GJ/m^2 for multifamily building and 2.3 GJ/m^2 for the tower) both of the use phase (from 85-90 kWh/m^2a for single family houses to multifamily houses for 50-55 kWh/m2a);
• the role of the settlement in relation to the consumption of soil and in relation to the reduction of the absorption of carbon and carbon stocks in soil (from the loss of 60-85 kg CO_2/m^2 of the single-family houses to the loss of 13-17 kg CO_2/m^2 of the multifamily buildings), the role of forest loss, however, is small compared to the impacts generated by the construction and use;
• the total reduction of emissions of $CO_{2\,eq}$ is 50% from single-family houses to the tower building.
Interesting results emerge from the normalization of the results in relation to the number of people settled (Table 3).The results show:
• the role of the number of people settled in relation to the square meters per person (high square meters per person in single family homes accentuates the differences between the different patterns of settlement, an issue that doesn't emerged in normalisation with respect to m^2);
• a total reduction of emissions of $CO_{2\,eq}$ is 80% in the transition from single-family houses to the tower building, very different from the results illustrated before (this shows the role of the reference value for normalization of data).

Monica Lavagna - Paco Melià - Paolo Pileri - Viktoriya Sendyureva
Politecnico di Milano, Italy

Conclusions

The settlement assumptions are just an hypothesis (just to have reference drawings to calculate quantity) and it is clear that different configurations may generate different results. Considering the large degree of approximation, however, the results illustrate considerable differences of the values both from the point of view of the consumption of soil, both from the point of view of the impact generated by the different building form factors, which are worthy of attention and are important to identify the problems.
Many aspects have been neglected in the paper, for example the role of transport (in the case of single-family residences is likely that it is an individual transport by road, while in the case of multi-family residences is possible to envisage a collective transport). Overall, therefore, the assessed impacts are understated, compared to a full assessment of all aspects.
The paper aims to illustrate what kinds of assessments can be made to support strategic decisions settlement. The specific results of the evaluation have only a limited role, but the value of the paper is the methodology proposed, not yet completed, and also capable of further degrees of deepening, but it s a first indication towards a more comprehensive approach to assessing the sustainability of interventions .
It must be underline that this approach has been possible to integrate different disciplinary fields (ecology, urban planning, technology of architecture) and different scales of analysis (territory, building, building materials), demonstrating once again the importance of a global vision when addressing the theme of environmental sustainability.

Bibliography

AA.VV., *Progetto Kyoto Lombardia*, edizione Fondazione Lombardia per l'Ambiente, Milano, 2008 (www.flanet.org).

Alberti, M., *The effects of urban patterns on ecosystem function*, in «International Regional Science Review», n. 28, 2005, 168–192.

Ciais P., et al., *The European carbon balance. Part 2: croplands*, in «Global Change Biology» n. 16, 2010.

ERSAF, *Stock di carbonio nei suoli regionali*, Ente Regionale per i Servizi all'Agricoltura e alle Foreste, Milano, 2008.

Del Galdo I., Six J., Peressotti A., Cotrufo M.F., Assessing the impact of land-use change on soil C sequestration *in agricultural soils by means of organic matter fractionation and stable C isotopes*, in «Global Change Biology», n. 9, 2003, 1204–1213.

Ecoinvent, *Swiss Centre for Life Cycle Inventory* (http://www.ecoinvent.org)

ERSAF, *Rapporto sullo stato delle foreste in Lombardia al 31 dicembre 2010*, Ente Regionale per i Servizi all'Agricoltura e alle Foreste, Milano, 2011.

Frenkel A., Ashkenazi M., *Measuring urban sprawl: how can we deal with it?*, in «Environment and Planning B: Planning and Design», n. 35, 2008, 56 -79.

Gennaio M.P., Hersperger A.M., Bürgi M., *Containing urban sprawl – Evaluating effectiveness of urban growth boundaries se by the Swiss Land Use Plan*, in «Land Use Policy», n. 26, 2009, 224-232.

Hammond G., Jones C., *Inventory of Carbon & Energy (ICE), Version 2.0, Department of Mechanical Engineering*, University of Bath, 2011.

Hegger M., Auch-Schwelk V., Fuchs M., Rosenkranz T., *Baustoff Atlas*, Institut für international Architektur-Dokumentation, Monaco, 2005.

IPCC, *2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 4: Agriculture, Forestry and Other Land Use, National Greenhouse Gas Inventories Programme*, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds.), *IGES*, Japan, 2006.

Lavagna M., *Life Cycle Assessment in edilizia*, Hoepli, Milano, 2008.

Lavagna M., Paleari M., Mondini D., *Murature ad alte prestazioni*, Maggioli, 2011.

Liski J., Perruchoud D., Karjalainen T., *Increasing carbon stocks in the forest soils of western Europe*, in «Forest Ecology and Management», n. 169, 2002, 159–175.

Osborne B., Saunders M., Walmsley D., Jones M., Smith P., *Key questions and uncertainties associated with the assessment of the cropland greenhouse gas balance*, in «Agriculture, Ecosystems and Environment» n. 139, 2010.

Pileri P., *Consumo di suolo e rilascio di carbonio in atmosfera. Il piano può fare qualcosa?*, in Atti della XIII Conferenza della Società Italiana degli Urbanisti, "città e crisi globale: clima, sviluppo e co-habitat", Roma, 25-27 febbraio 2010.

Pileri P., a cura di, *Spazi Aperti. Un paesaggio per EXPO*, Electa, 2011.

Schulp C.J.E., Jan Nabuurs G., Verburg P., *Future carbon sequestration in Europe - effects of land use change*, in «Agriculture, ecosystem and environment», 2008, 127.

Table 1 – Carbon stocks and fluxes in Lombardy forests (from ERSAF 2011).

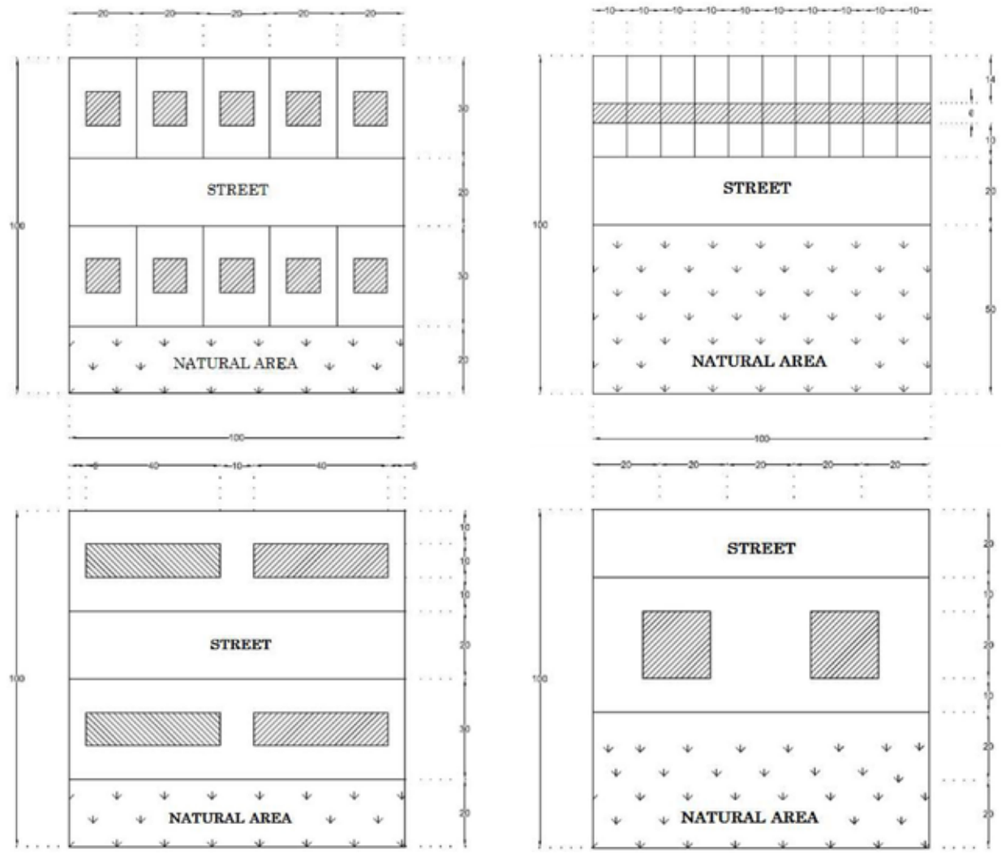
	Living biomass	Dead organic matter	Soil	Total
Carbon stock (tC/ha)				
Milano Province	19.69	3.69	31.01	54.38
Lombardy	18.27	3.04	24.24	45.55
Carbon accumulation (tC/ha/yr)				
Milano Province	0.66	0.08	0.94	1.68
Lombardy	0.62	0.05	0.67	1.34

Table 2 – Carbon emissions and energy consumption in 30 years (normalised for m^2 of living area)

	Loss of carbon stock+accumulation	Emissions for building +street construction	Energy for building +street construction	Emissions for building use direct+indirect	Energy for building use direct+indirect	Total	Total
	kg CO_2	kg CO_2eq.	MJ	kg CO_2eq.	MJ	kg CO_2eq.	MJ
2000-1200 m2/ha							
Scheme 1	30+28	380+33	4408+1070	323+207	9735+2804	1001	18017
Scheme 2	43+40	353+55	4098+1783	308+197	9265+2668	996	17814
8000 m2/ha							
Scheme 3	9+8	238+8	2824+267	205+131	6156+1773	599	11020
Scheme 4	7+6	194+8	2340+267	179+114	5385+1552	508	9544

Table 3 – Carbon emissions and energy consumption in 30 years (normalised for persons)

	Loss of carbon stock+accumulation	Emissions for building +street construction	Energy for building +street construction	Emissions for building use direct+indirect	Energy for building use direct+indirect	Total	Total
	kg CO_2eq.	kg CO_2eq.	MJ	kg CO_2eq.	MJ	kg CO_2eq.	MJ
40 persons/ha							
Scheme 1	1495+1386	18990+1650	220400+53500	16185+10358	486780+140193	50064	900873
Scheme 2	1296+1201	10590+1650	122940+53500	9242+5915	277956+80051	29894	534447
400 persons/ha							
Scheme 3	179+166	4758+165	56480+5350	4093+2620	123120+35458	11981	220408
Scheme 4	140+129	3875+165	46796+5350	3581+2292	107718+31022	10182	190886



Andreina Maahsen-Milan
Università di Bologna, Italy

War ruins, peace landscapes, metropolitan nomadism. ["Natura artificialis" and urban mobility | Olympiapark-München]

Premise

Construction of infrastructural networks and landscape care often play opposite roles in the design of balanced urban spaces: sometimes, however, technology and environment co-exist and get harmonized in the creation of the so-called *'Gartenkunst' as "natura artificialis"*.
Many of the public urban parks originate from important infrastructural works put in place for the Modern Olympic Games. From the urban and architectonical point of view they represent the final act of an awesome organization and finance effort over many years requiring immense disbursement commitments, never re-paid by the event. During the time their weight was used as media platform or technical showcase the Host Country's industrial lobbies. It is not accidental that during the XX Century, the Games were scenes of resounding and sometimes dramatic events: demonstrations on the streets, protest and stonewalling, terrorist attacks.
As known, the course of Olympic experience over its 120 years, originates from the wills to recover and restore the "golden age" of the western world removing (or subliming) the idea of war. In the motto "*Citius, altius, fortius*" – conceived by the pedagogist Père Henry Didon (1840-1900) for the Youth Games[1] in March 1891 – the progressive pedagogic role determined by the competitive spirit both in physical disciplines and in consciousness (Müller, 2008).
For the "originator" of the modern Olympic Games - Pierre de Fredy, Barone de Coubertin (1863-1937) – the sporting competition brings to life effectively the positive and eugenistic vision of that time. The De Coubertin aristocratic competitive spirit diverges from the democratic dimension of physic exercise proposed by J.F. Paschal Grousset (1844-1909). Different and conflicting visions – the "outdoor" sport place and the "indoor" place for the gym – have acquired since the beginning the importance of cultural manifesto implying both spaces and infrastructures. The places themselves will assume gradually a strategic role in the "epic narration" (but also pedagogic and ideological) by institutions and governments promoting it.

Case Study.

In summer 1972, in the occasion of the XX Olympic Games, Munich opened the Olympiapark-München, (called "*Olypark*"), synthesis of a multi-year plan of infrastructures for roads, services, residences, sports and leisure time. The vast area – on a surface of 300 hectares – attracts flows of visitors, sports amateurs or common pedestrians who stroll and bike along lawns and paths, or visit the areas on electric trains sightseeing the sweet hilly landscape. *Olympiapark* is more than just that: it represents the physical translation of the ideal conception of civil society in Germany after the Second World War, a kind of "historical picture" of juvenile movements of the Sixties, mainly made up by pacifists and liberals. That vis civile is reflected in the sophisticated simplicity of the *Landschaftarchitektur* as well as in the architectural works gathered – bright and inviting – around the artificial lake. Less known to the public is the fact that such an idyllic landscape was modelled on the ground of a huge dumpsite of war debris. Such deep symbolic value – to build a "place of peace and harmony" – is the interpretation key of a successful experiment of progressive planning. Since its very first conception (Günther Grzimek, 1968-'72) both the plan and the park have been proof of a choice that can be surely defined as "environmentally sustainable" *ante-litteram*.

"Effects of Good Government"

Four decades after XX Olympic Games closing (Munich, 1972) the challenging work of urban recovery of university dormitories at the border of the ex Olympic Village [*Olympisches Dorf - Studentenviertel Oberwiesenfeld*] popular known as "*Olydorf*" is being accomplished. The buildings made of an Hochhaus (high-rise block of flats) and a low density ward [Bungalows], are being radically restructured to improve function and performance of flats and common services.
The buildings are part of a residential complex built to welcome during Olympic competitions in 1972 international delegations of athletes. The overall architectonic quality – and the building issue of the Munich Olympic ward – deserves some illustration notes as to prove that the current "urban re-generation and environmental recovery" policies are part of administrative "good practices" already started in the middle of the Sixties. Good country and estate governance practice was carried out over half a century of social work, conveyed and enhanced in the decades after by a politic-entrepreneurship class careful on welfare in its broader sense. As per the case study criticism is unanimous in asserting that the winning formula of the happy Munich experience is due first of all to "declining to be monumental". It is not a case that the choice to adopt a "wise interplay with landscape elements" has "bestowed to the sport park grace and urbanity. It's about an " […] *incredibly lucky case, able to allow to make real a daring idea without encountering during the 5-year's project and building obstacles placed by political calculations, cross-vetoes, finance limitations or technical bonds*", (Bode 1996).

Landscape creation.

The Oberwiesenfeld district [lit. "high lawns field"] raises in the north-western part of the Bavarian capital, not very far from the urban centre, tangent to the well known "*Quartier Latin*" in Schwabing-West. The area already occupied in 1785 by barracks and military exercises was accommodated in 1909 to a flying field for airships. Later on (1925-29) it was restructured in the first urban civil airport. From 1923 the large area became renowned because of gatherings and demonstrations organized by the emerging National Socialism Party. It is thus not accidental that in the middle Thirties, Oberwiesenfeld was included in a broader infrastructural strategy planning to locate cumbersome urban facilities (as abattoir with wholesale market, freight terminal next to the cogeneration power plant). Stated aim was to modernize and transform Munich in the symbol for German efficiency and legendary Bavarian liveliness: "*Hauptstadt der Bewegung*" (Capital of Party) i.e. the Third Reich's cradle and "moral capital".

Its destiny after 1945 utterly changed. At military aviation field border – active until 1968 – Oberwiesenfeld felt in a desolate deterioration condition, occupied by gasometers and barracks. Between 1947 and 1955 the greatest part of building debris dumpsites was created, covering at the end an area of four hectares. To the artificial hill created by 10.85 millions of cubic meters of ruins a decade later the excavation soil of the subway, the "Georg Brauchle-Ring" ring road system, was added.

Environment and urban recovery project

Similar to many German and European cases in the Post-War period, the official German candidacy to the Olympic Games was the opportunity to get started on a fundamental part of the urban planning. Beside this in the new artificial landscape brought about by wartime disasters, interventions became an opportunity to begin with radical environment redevelopment, re-modelling and recovery based on the experience of Cologne in the early Fifties. Other outstanding infrastructure works involved the area with the crossing from the *Mittlerer Ring,* the state-owned road, making up the end of the Munich ring road system (1950-1972) and the connection to subway U3 (*Moohsach-Fürstenried*). In this ambitious plan, *Olympiapark* and Olympischesdorf got off to be among the most valuable areas of Munich growth thanks also to strong investments started by the University Organization started already in the early Sixties. The *Olympiapark München GmbH* holding – the building company and managing institution of the Village – was and is still a public corporation fully held by Munich Municipality. The intervention aimed to create a residential and service district to accommodate about 12,000 inhabitants – as response to the never-ending demand of Social Housing intended for young couples and university students.

A project with high media effect.

The valuable initiative cost at that time over two billions and a half DM. An immense sum even for the flourishing Federal Republic in that period, coming out of the Post-War crisis thanks to an extraordinary economic situation (*Wirtschaftswunder*) and to the management of enlightened political establishment at local and national level. After Mexico City Olympic Games in 1968, the summer Games came back to Europe. For FRG this was the opportunity to cancel the gloomy memory of Berlin Olympic Games in 1936, dominated by the swastika.
The leitmotif accompanying the Munich Olympic district planning was inspired by the idea of a regained harmony and joie de vivre as intended in the western world. Optimism and enthusiasm at that time driven by the idealistic charge after the Protests of 1968 and combined with the impressive technical-financial German ability were able to carry out the work just within five years, exciting admiration of the Olympic Committee and international public. Nevertheless the XX Olympic Summer Games closed dramatically, making the Athletes Village the scene for one of the darkest and bloodiest deeds of international terrorism (Reeve 2001).

Concept and Planning Principles.

1967-'72 | Projects for Olympic District and for a new democratic society
The architectonic ensemble appearing today as harmonious is actually the outcome of concerted work of different technical teams coordinated by G. Behnisch and E. Heinle. Behnisch's plan was based on the common proposal winning the competition in 1967 together with Fritz Isler (1926-2009), Swiss structural engineer. Probably thanks to intervention of the historian J. Joedicke (1925), Frei Otto (1925) and Jörg Schlaich (1934) took over in 1968 to revolutionize the conceiving of large roofing choosing the structural "immateriality". The "planners vision" was daring both as concept as well as on formal level and was accompanied by scathing disputes and by doubts on the technical feasibility of system and components. The heated debate caused the involvement of the greatest architects and technologists at that time, first of all Egon Eiemann and Fritz Leonhardt, openly rallying to the defence of the project. In Behnisch's idea plan and architecture gave breathe life to an innovative functional and settlement experimentation stirring still today because of quality and originality, anticipating state-of-the-art technological solutions. Even if partially realized, Behnisch's plan gave a determining boost even during definition of the residential district. It is important to notice how the "*mixité sociale*" principle behind the current experiences of urban regeneration was the leading element qualifying the intervention. From the iconic point of view the plan synthesizes also the key principles of contemporary architectonic culture. The evocative organic forms of Olympiapark (the Olympic park strictly speaking) are balanced by *poetic objectivity* of the *Ulmer Schule* (Bonsiepe 2003) and by the solid Bavarian pragmatism (Nerdinger 1996).
Despite the short time available to develop the project, Dr. Günther Behnisch could manage its assignment with expertness and accuracy having the possibility to count on a large and well integrated team of professionals and young specialists. Diversity and numerousness of the group and of the other teams was compensated by cultural homogeneity of the planners coming all from the most important bureaus of the Federal Republic. All architects and engineers studied at the esteemed University of Stuttgart, as students or assistants of Paul Bonatz, Rolf Gutbrod, Fritz Leonhardt. Many among them were already or would become professors at major federal technical universities [*TH-Stuttgart, TU-Darmastadt, TUM-München*] thus demonstrating the very tight link that in Germany has always existed between professional, academic and industrial spheres.

Recovery of Oberwiesenfeld

Already since the early Sixties the decision to recover Oberwiesenfeld with substantial reorganization works was already taken. In 1965 the very high Telecommunication tower (Olympiaturm, S. Rosenthal, 1965-'68) was erected. This, together with the 'tent' of F. Otto, became the lucky brand of XX Olympic Games. Elevated at world fame the sport facilities are characterized by the 'tent' in acrylic transparent material suspended on 24 pylons manufactured by Krupp steel mills. This structure improved the conceptions of brilliant Frei Otto worked out in the early Fifties and experimented on large scale in the German Pavilion at Montreal. It is interesting to substantiate how the technological solution actually made topical an antique architectonic "topos": the idea of classical Stadium recovered already in the first modern Olympic Games (1896) reintroduced by the Panathenaic Stadium (1870) of Ernst Ziller (1837-1923). A natural arena created by ground height differences where architecture seems rather only as a "concept strengthening".
The sport district is definitely an example of "landscape construction" among the most successful. The recovery of a deep compromised site was achieved tanks to the magisterial arrangement of Landschaftarchitekt (landscape architect) Günter Grzimek (1915-1996), already active in *HfG-Ulm* and Kassel. Re-modelling debris heaps and digging a lake integrated in the architectures of G. Behnisch, Grzimek intended to realize a genuine "democracy park": not " *a promenade path for privileged persons, but a space for wellness of all citizens made of sport, leisure time and outdoor life*" (Grzimek|Rainer 1983).
For Grzimek the green areas were conceived as multifunctional multi performance spaces able to fulfil the most wishes of the users. His researches on participation in planning make him one of the pioneers of the democracy and peace current of German land-use planning; in particular he was interpreter of the socializing and pedagogic role of playgrounds and of the development of leisure facilities.
His awareness of the planning role of users urged him for instance to plan avenues, to follow the paths creating spontaneously and consolidating the green surfaces, instead of imposing his will as an architect. This open attitude allowed also avoiding costly planning errors.
It is thus not a straining to read in the project an urban archetype, inheritance of a never ever dead aspiration to Mediterranean Classicism. A spirit widely documented in Munich architecture tradition and re-invented by L. v. Klenze and F. v. Gärtner as the most "southern" and "Italian" town among the trans-Alpine towns.

1967-'72 | The Olympic Village, a laboratory of land-use planning.

The Olympic residential district – erected above the Mittlerer Ring – was entrusted in 1968 directly to a local Munich group, ranking the third place in the competition. The team coordinator was Prof. Erwin Heinle (1917-2002), together with Robert Wischer, Gordon Ludwig | Gerd Wiegand (1922-1994) | Werner Zuleger association joined them. The planning was carried out in an extraordinary brief period – only five months work – thanks to the contribution of 22 architects of Heinle bureau, who applied innovative procedures and were able to elaborate no less than 57 plans, articulated in five executing stages.

Olympiapark today – Mobility structures

"Olypark" is today among the urban places with the highest urban dynamism: the works of the "historical" district have been completed with other installations of high architectural level and value which have increased service quality and attractiveness both at urban and territorial level. In particular, the Landmark of *BMW-Museum | BMW-Welt and München Olympia-Einkaufszentrum (OEZ)* – built at the intersection of the U3|U1 subway lines- attract huge flows of visitors and tourists. The subway station itself – recently re-styled – is a sort of superplace stolen to the metropolitan anonymity by means of colours and pictures. In fact, it is here, and in the three other subway stations, where most of the district life takes place, a district which is "nomadic" and at high-density of youngsters and students. The re-styling of the stations involved designers and artists who totally changed the original image. (Hackelsberger, 1997).
In 2007 the new station, called *Olympia-Einkaufszentrum (OEZ)*, connected to the new *Oberwiesenfeld* station (originally called *Olympiapark-Nord*) was opened. The subway station "*Olympia Einkaufszentrum*" project was entrusted to the historic office Walther und Bea Betz [Betz Architekten]. The work inaugurated in 2004 is an attempt to "disburden" from the soil pondus of the compulsory hypogean architecture and to facilitate travellers' orientation by means of materials, colour-light and strong space characterization. "*The ceilings are exposed concrete painted blue, the walls are clad with stainless steel elements, the floors*

and exits are made of granite. For orientation of the passengers, the U1 has vertical folds, and the U3 has a pyramid shaped pattern on the wall. The drawings show the U1 station, a 8 meter high and almost 100 meter long. Lighting strips on the ceiling in changing colours are reflected in vertical mirrors, generating a feeling of the infinite. The vertical folded stainless steel surfaces in between act like screens."[2]
On the southern platform wall the artist Rudolf Herz (1954) traced an anamorphic black and white labyrinth. The northern wall is faced with warm orange coloured clinker ledges which recalls – as the sight concrete ceiling - the architecture and the colours of the pre-existing stations designed for 1972 Olympic Games. At middle level basement of the subway the ironic installation of Berlin sculptor Olaf Metzel (1952)- "*Erst rechts, dann links, dann immer geradeaus" ("First to the right, than to the left and after always straight forward")* – evokes with the long safety barrier at the ceiling the chaotic car traffic occurring on the surface.

Conclusions

'Olypark' – with its urban "archipelago"- can be considered as a key example of that willingness to harmonize environmental recovery, social mainstreaming and mobility: today the implementation of policies of Social Housing and the availability of integrated services are able to offer suggestions, inputs, models for the recovery of the European global city.

Notes:

[1] This sport competitions took place at the Dominican College "Albertus-Magnus" of Arcueil near Paris.
[2] From the website Betz Architekten Muenchen: http://www.betz-architekten.de/html/projects/index.html

Bibliography:

Architekturwettbewerbe, 1969, *Bauten der Olympischen Spiele 1972 München*, (January 1969), in Bauen und Wohnen, (July 1972), Callwey, München.

Bode, P.M., Screiber, M., 1986, *Deutsche Architektur nach 1945: vierzig Jahre Moderne in der Bundesrepublik*, Deutsche Verlags-Anstalt, Stuttgart.

Bonsiepe, G., Bürdek, B., Fernandez, S. (2003), *Ulmer Modelle*, Modelle nach Ulm, DVA, Stuttgart.

Brenner, N., Keil, R., (2006), *The global cities reader*, Routledge, New York.

Chilton. J., (2000), *Heinz Isler*, in: T*he Engineer's Contribution to Contemporary Architecture*, T. Telford (RIBA Publications), London.

De Moragas, M.; Llinés, M.; Kidd, B. (ed.), (1997), *Olympic Villages. Hundred Years of Urban Planning and Shared Experiences*, Univ. Lausanne.

Aschenbach N., 2008, *Studentische Architektur. Achtzehn Quadratmeter Deutschland*, F.A.Z.(Frankfurter Allgemeine), 06.02.2008, n. 31, p. 35.

Gollwitzer, G.; Grzimek, G., (1972), *Spiel und Sport in der Stadtlandschaft. Erfahrungen und Beispiele für morgen*, München.

Hackelsberger C. Müller-Naumann, S., 1997, *U-Bahn Architektur in München*, Prestel Verlag, München.

Heinle H., Wischer & Partner Planungs GmbH. et al., (1980), *Eine Stadt zum Leben: das Olympische Dorf München*, Müller, Freudenstadt.

Holgate, A., (1997), *The art of structural engineering: the work of Jörg Schlaich and his team*; Ed. Axel Menges, Stuttgart, London.

O.A.,(1967), *Expo '67 Montreal. Deutscher Pavillon*, Düsseldorf.

Meyer-Künzel, M., 1998, *Städtebau der Weltausstellungen und Olympischen Spiele. Stadtentwicklung der Veranstaltungsorte*, University of Braunschweig.

Müller N., (1996), *Die olympische Devise "citius, altius, fortius" und ihr Urheber Henri Didon*, in *Forum Kirche und Sport*, II, Neusser Dr. u. Verl., Neuss.

Nerdinger. W., Blohm, K. (eds), (1993), *Architekturschule München 1868-1993. 125 Jahre Technische Universität München*, Klinkhardt & Biermann, München.

Official Issue for the Olympic City of Munich, 1972, *Plans and buildings for the Olympic Games*, Munich.

Pabel, R., (1978), *Im Schatten des Michel Das Kramer-Amt in Hamburg und seine Witwen-Wohnungen am Krayenkamp*, Christians-Verlag, Hamburg.

Pres. W., (2011), *Der Olympiapark München 1972 und das Reichssportfeld Berlin 1936 unter Einschluss des Olympischen Dorfes bei Döberitz unter sporthistorischer Betrachtung*, GRIN Verlag, München.

Reeve, S., (2001), *One Day in September: the full story of the 1972 Munich Olympic massacre and Israeli revenge operation "Wrath of God"*, New York.

Rossana Paparella
Università degli Studi di Padova, Italy

Title: Building products made from recovered paper and cardboard: applicability and first conclusions.

Abstract

The need of decreasing the amount of waste produced and released into the environment and, simultaneously, to preserve the resources close to extinction, led to the use of recycled and recyclable material even in the construction process. On one hand, this contributed to help reducing waste for disposal and on the other, to reduce the consumption of natural resources.
In this paper the feasibility of applying innovative building products made from recovered waste was investigated, with particular focus on products derived from recovered paper and cardboard in order to identify whether they can be a real alternative to more traditional products contributing to make the building process more sustainable.
While the use of products derived from recycled glass, steel and even plastics can be more easily conceived by the fact that these materials are already being perceived as part of the construction, paper and cardboard may seem about as far from the robustness and resistance commonly associated with buildings. The decision to narrow the research to products from recovered paper and cardboard has been dictated by the fact that the paper industry is among the areas where the use of recycling achieved the best results and where, consequently, there are large quantities of recycled material to re-emit in the production cycle.

In order to analyze the real applicability of these products, three aspects have been identified and explored:
• the commodity aspect;
• the standard aspect;
• the informative aspect.

The in depth study of the commodity aspect is vital to understand the derivation of the analyzed products and from which recycling processes it is possible to obtain the raw material from which they are made of.
Knowledge of the standard framework is useful in order to understand the evolution of the environmental standards, both on an European scale and on a national scale, which favored the use of raw materials from recycling processes. Moreover, it leads to the understanding of the conditions and of the various applications in which products derived from recovered paper and cardboard are used at the same level of traditional products in the construction process.
Finally, given the innovation these products represent, acknowledging the current state of supply on the market, the level of information to understand the applications for which these products are a real alternative to traditional products and the real environmental benefits that might result from their use become fundamental.

1. Introduction

Proposed by the architect Shigeru Ban on the occasion of the 2000 Hanover Expo, a Japanese pavilion was realized with a bearing structure composed by cardboard pipes obtained by recycled cardboard. More recently, in 2009, in the city of Conegliano Veneto (Italy) it has been inaugurated the site of the SAVNO, a company that manages the Services of Environmental Hygiene for many municipalities, hosted in a building realized with materials and construction products obtained by the recycle of wastes coming from the separate collection.
These buildings promote the use in the construction sector of materials and products obtained by the recycle of wastes and discards coming from other production sectors and they constitute some examples that interpret in an innovative way the thematic of environmental sustainability. Initially, for the construction sector the so-called endogenous recycle was applied, this consists in recycling wastes produced during the phase of construction and those consequential by the demolition of a building. Instead the external recycle is now applied, in which the recycled raw materials from which the construction products are obtained, do not derive from the discards of the building process, as in the case of the endogenous recycle, but originate from the wastes of other production sectors or from wastes of the separate collection.
In the building sector, the employment of recycled recovered paper and cardboard has found a more diffused application only in recent times, despite the intuition of their possible use in the construction sector was already known, even though with different presuppositions from current one of the sustainability. As a matter of facts, the Papercrete which is a conglomerate obtained from the mixing of recovered paper and cardboard with sand and Portland cement, was patented in 1928 but, given the easy and economic realization that would not have guaranteed any meaningful profit in case of a production launch, it was not used. It was then rediscovered in the eighties in the United States as construction material often produced directly on the building site.

1.1 Wastes based on cellulose

According to the data diffused by Comieco[1] in the decade 1998-2008 the separate refuse collection of paper and cardboard increased from 1.000.993 tons to 2.945.469 tons; it is also meaningful to see how the average quantity of paper and cardboard that every Italian has separated per year, has increased from 17 kg to the 50,1 kg/ab. year in the same decade[2] ; such tendency results confirmed for the year 2010 and it is attested around 52,2 kg / ab. year[3]. It followed an important increase of the quantity of recovered paper and cardboard destined to recycle, allowing the rate of recycle to increase from a scarce 40% to 74% placing Italy among the most active countries in the recycle of refusals based on cellulose. At the same level as the virgin fibers in the paper industry appear affirmed by now the employment of recycled fibers in a varying percentage depending on the desired type of paper; in 2008 the paper industry has produced over 11 million tons of products based on cellulose and the raw materials employed, originated for the 49,2% from recovered paper and cardboard, for the 33,8% from virgin fibers and for the 17,0% from non-fibrous raw materials. If the reemploy of recycled fibers aimed to obtain new paper, does not represent a news, the employ that regards the recycle of recovered paper and cardboard in the construction sector is innovative.

2.The legal bases framework

The following European Directives have been analyzed: 75/442/CEE “Directive on waste”, 91/156/CEE amending Directive 75/422/CEE on waste, in which it appears for the first time the term “secondary raw materials” even though this term was not defined univocally, Directive 2006/12/CE and 2008/98/CE, the last currently in force. For what regards the hazardous waste, reference was made to the Directive 91/689/CEE, while on packaging and packaging waste, Directive 94/62/CE and 2004/12/CE were analyzed. In all the Directives there is a particular attention to the definition of an accurate terminology in the waste management subject, and to the definition of important concepts such as the waste hierarchy and the plan of objectives for recovery.
The concept of secondary raw material has been a focal point in the analysis of the legislative texts with the purpose of understanding when and the characteristics with which a waste enters the end-of-waste status and is considered a raw material able of being re-inserted in the productive cycle. The adoption of the 75/442/CEE Directive, related to wastes, occurs in Italy with the D.P.R. September 10th 1982, n. 915. For the first time in Italy, with this decree it is promoted the appeal to recycling and re-use systems of wastes and their treatment which allow to obtain material and energy. The concept of waste was defined and the wastes were divided into four categories (urban, special, toxic and hazardous) and, for each of them, a specific juridical regime was defined. In matter of industrial wastes’ disposal, the L. November 9th, 1988, n.475, introduced the concept of secondary raw material in the national discussion arising still open issues.
With the following D.M. January 26th 1990, enacting the L. 475/88, a wider adoption of the Directive 75/442/CEE wanted to be promoted. In this decree, simplified authorized procedures that favored the activities of wastes recovery in comparison to those foreseen for the activities of disposal were introduced; moreover, 31 typologies of secondary raw materials that could be recovered with simplified procedures were identified. The D.L. 443/93 introduced for the first time the concept of residue, an entirely ignored concept at community level. With the D.L. February 5th, 1997, n.22, better known as Decree Ronchi, Italy finally adopted the European Directive 91/156 regarding wastes, so it tried to re-organize the whole matter of wastes fixing all the previews dispositions.
The D. Lgs. April 3rd, 2006, n.152 bearing “*Legislations within environmental matter*” has been emanated with the ambitious objective of gathering and coordinating in one measure the legislative discipline of different environmental sectors. The environmental Code is composed of 318 articles, besides a voluminous number of Annexes. The art. 183 gives many definitions among which, the most interesting for the matter here considered are: waste, waste producer, waste holder, management, collection, separate collection. Particular emphasis has to be given to the definitions of by-product and secondary raw material. The following D.Lgs. n.205 of December 3rd, 2010, has introduced changes to part IV of the Environmental Code (D.Lgs. 152/2006) repealing art. 181 and introducing, in art.12, some changes concerning the by-product, in particular, it foresees that the conditions stated in the legislation must be all satisfied. The incompletion of just one condition entails the material to be consideration as waste.
The definition of secondary raw material disappears in the new text, as well as the art. 181-bis which established its characteristics and conditions; in reality, the secondary raw material keeps on existing thanks to technical legislations that regulate the recovery of wastes and, in a certain way, it is replaced by the new concept of “end-of-waste status” stated in art. 184-ter.

3.The construction products obtained from recovered paper and cardboard

Within the European program LIFE, the BBRI[4] elaborated the project Recyhouse, whose final objective was the construction of a residential building (1996-2002) almost exclusively using recycled products. Out of the 145 products obtained from materials derived from the recycle of wastes, 11 were obtained from the recycle of recovered paper and cardboard. At a distance of 10 years from the experimentation of Recyhouse, it was carried out an investigation[5] on the products present in the Italian market. The research was carried out following the classification for classes of technological unity, defined in the UNI 8290-1 (Italian Standard), and it has underlined that the construction products currently present on the market, mainly fall within the following ones, bearing structures, vertical external walls and internal partitions; three uses typologies can be individualized: for structures; for insulation; for render coating.

The market research has considered 41 products and it has underlined that for the insulation typology there are 24 products; for the coating typology there are 18 products; while for the structures typology there are 5 products. For each of the products considered, it was created a synthetic informative card that contained information related to the origin of the product, technical-descriptive information and useful information for its employment and its correct use. The current state of technological progress allows the production of components realized with cellulose fibers deriving from the recycling of recovered paper and cardboard such as (see fig. 1):
• sandwich panels;
• formwork;
• soundproofing and thermal insulation panels ;
• blocks and conglomerates to base of paper;
• covering panels.

3.1 Sandwich panels

For the production of panels sandwich alveolar cardboards can be used; the alveolar in turn, can be obtained employing percentages varying from 50 to 100% of recycled paper. The alveolar are composed of three layers of various consistency: an intermediary layer of stiffening in cardboard or kraft paper and two cardboard skins assembled to it through glues; it is important to notice that for instance the kraft paper is a type of paper that in order to be produced, it requires an elevated percentage of virgin fiber.
The sandwich panels can be distinguished into those obtained from alveolar of bee nest and those obtained from alveolar of grid core type: the first ones represent a well consolidated technology, it is enough to look at the production of vertical inside frames, especially of doors, in which between two layers of external finish in compensated the alveolar of bee nest is interposed. The second alveolar type is more appropriate than the first one for the production of sandwich panels as it eliminates in their production the employment of resins and adhesives in order to increase their mechanical resistance.

3.2 Formwork

One of the fields for employment of recovered paper and cardboard is related to the production of cardboard pipes employed as formwork for concrete casting at circular section. Being inexpensive products they are used as lost formwork because their eventual re-employ would require that, once the casting is realized, the formwork would have to be cut, making the operation disadvantageous. Above all, even a potential form release agent would involve the rise up of problems linked to their disposal as the formwork soaked with cement cannot be easily recycled.
Among the most innovative orientations in the cardboard pipes field, there is their structural use without casting of completion; this employment was widely experimented by the architect Shigeru Ban and it is currently adopted for temporary structures. In this field, researches regarding the connections among structural elements and the considerable influence that water has on the mechanic-performance characteristics of the cardboard pipes used for structural purposes have been carried out. It was noticed that if the humidity level is superior than 5% in comparison to the standard conditions, the pipes begin to deform in correspondence of loads equal to 10% of the normal breakage load. Many different ways for increasing the cardboard resistance to the effects of water and humidity exist; for instance the appeal to superficial treatments or to the insertion of one or more waterproofing layers of various materials between the sheets of paper constituting the cardboard, but this is all at an experimental level: for this reason in the following analysis of the building products deriving from recovered paper and cardboard and their applicability, these types of products were excluded.

3.3 Soundproofing and thermal insulation panels

Among the most interesting employments for recovered paper and cardboard there is that to exploit the soundproofing and thermal insulation characteristic that these materials present; the production of thermal and acoustic insulators is obtained from recycled paper and cardboards pre or post-consumption mixed to mineral virgin material of various nature necessary to confer particular proprieties to the product. The insulating products obtained are commercialized either in the form of rigid or soft panels or in the form of loose flakes. In this last case, the fiber of recycled cellulose is mixed, crumbled into bits, with boric acid and borax obtaining in such a way flakes with fireproof properties that in their interstices, they capture cells of air, increasing the resistance to the heat passage. The material in the form of flakes is blown in the cavity walls, in the garrets or in the attics or alternatively is sprinkled on vertical or horizontal surfaces. The values of insulation obtained with these types of products are of 0.3 W/m^2Ks for a thickness of about 9 cm, moreover the cellulose fiber, being transpiring and hygroscopic, is able to absorb the environment’s humidity to then gradually release it. Moreover, if opportunely treated, the cellulose flakes serve to satisfy the anti-fire requirements. For instance, in the case of panels with insulating proprieties, recycled paper and cardboard are in most cases mixed with boric acid and borax, pesticides and fire-retardants.

3.4 Blocks and conglomerates based on paper

The blocks and the conglomerates based on paper use the non-selected recovered paper as an inactive lightening mixing it with a binder in order to realize construction blocks for buildings of modest height. When talking about blocks and conglomerates based on paper, main reference is directed to the Papercrete, a construction material obtained from the mix of recyclable paper and cardboard with Portland cement, in percentages varying between 10 and 20-25%, and eventually with sand. The recovered paper and cardboard used in the productive process of the Papercrete must preventively be left in water for 24 hours; subsequently to this operation the water in excess is eliminated through filtration in an appropriate mixer in which, it will finally be added to the cement. At this point, blocks or panels to be let drying will be formed.

Once the Papercrete is dry, it is a light and elastic material, with a compression resistance of around 20 kg/cm2, endowed with a good insulating power (approximately 0.8 m2K/ws for centimeter of thickness) and that tends to preserve its shape even if dampened. This material can constitute the starting point for new experimentations in which mixing different materials, both in terms of binders and of inert, the performances of this product could be enhanced by for example adding vegetable fibers to the mixture, and the sustainability, by for instance replacing the cement with materials like lime or clay. The experimental stadium in which the use of these products is found, together with the fact that often they regard experimentations on local and handicraft scales mostly tied up to auto-construction processes, do not render this typology of material very diffused at the market level.

3.5 Covering panels

Covering panels are generally produced with cellulose fibers obtained from the recycle of recovered paper mixed with wood fibers deriving from the discards of timber manufacturing.
The resins employed to confer resistance, durability and dimensional stability, are usually phenolic or in general thermosetting resins. In some cases, resins based on soy and non-toxic pigments are added; it is possible to obtain particular colors to the different covering products by adding natural or synthetic pigments or, even, using recyclable material already decorated: for instance the packaging of soft drinks have an already decorated and colored texture, therefore it will not be necessary to add glues or additive since the polyethylene contained in them melts in the productive process acting as a binding for the material based on cellulose.

4. Conclusions

The applicability of the construction products obtained by the recycle of recovered paper and cardboard is tied up to the different commodity, standard and informative aspects. Relatively to the commodity aspect it emerged how the paper sector is one of both the sectors in which recycling has reached some good results becoming a common routine and not just an alternative to the disposal imposed by the legislation. Right from this great development derive the quality and the constant performance characteristics of the recycling process product, the cellulose fiber, raw material of the analyzed construction products.
Relatively to the analysis of the standard aspects in the environmental matter and of their evolution, both on National and European scale, it was evident how these, since the first Seventies, have favored the appeal of recycling as an alternative to disposal, up to defining its priority and, as a consequence, to favor its employment and its re-emission in productive processes of recycled material as secondary raw material. For what then regards recovered paper and cardboard, once satisfied the commodity characteristics listed in the Annex I of the D.M. February 5th, 1998 bearing "General Technical Legislations for the recovery of matter from the non-hazardous wastes" and following modifications, the recycled cellulose fiber reaches the end-of-waste status and, it could be seen, how its employment in a new productive cycle is entirely equivalent to that of a virgin raw material.
Finally the analysis of the informative aspect is that that brought to the considerations of major interest underlining how, among the products obtained from the recycle of paper and cardboard, it is necessary to make some distinctions in relation to their applicability.
From the completed analysis it was noticed that, for most of the products belonging to the insulation and render coating categories, the technical information is sufficiently clear and exhaustive relatively to their composition, their use and application. For what regards the products to employ in structural terms, the information is lacking as the development for this type of products still at experimental stage.
Sill from the information point of view, it is observed that for all products obtained from recovered paper and cardboard there is missing information on the environmental aspects linked to their dismissal. In fact the products obtained from recovered paper and cardboard could constitute an interesting alternative to traditional products, especially for what regards thermo-acoustic insulation materials and for the render coating elements. However, it is important that their sustainability is present for their entire life cycle.

Notes:

[1] National Consortium for the Recovery and Recycling of Cellulose-based Packaging;
[2] XIV° Report: *Collection, Recycling, and Recovery of paper and board*, edited by COMIECO, Milan, july 2009;
[3] XVI° Report: *Collection, Recycling, and Recovery of paper and board*, edited by COMIECO, Milan, july 2011;
[4] Belgian Building Research Institute;
[5] S. Ciotti, "L'applicabilità dei prodotti da costruzione ricavati da carta e cartone da macero" , Bachelor's Degree Thesis, advisor R. Paparella, a. a. 2009-2010.

Bibliography:

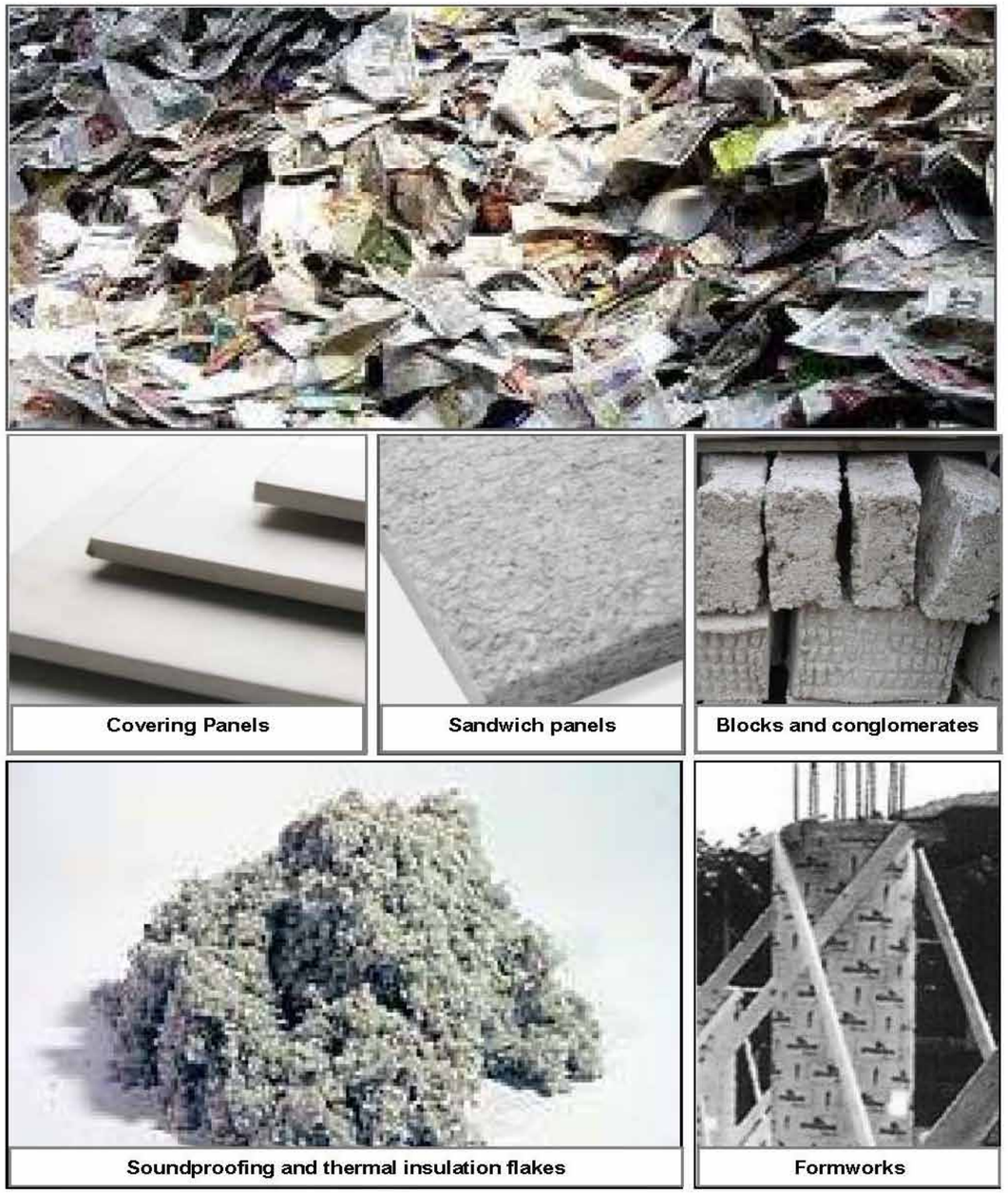
Braulin N., Chioetto V., *Costruire con il cartone: il doposcuola di Westcliff on Sea*, in *Il progetto sostenibile*, n. 8, settembre 2005, Edicom Edizioni

Mombelli R. L., *Der Blauer Engel (l'angelo azzurro) cicli e ricicli dei materiali nel settore edile*, in Materia , n. 63, settembre 2009, Motta Architettura

Rogora A., *Blocchi "a freddo" con materiali di recupero*, in *Il progetto sostenibile*, n.12, ottobre-dicembre 2006, Edicom Edizioni

Rogora A., Scudo G., a cura di, *Costruire con la carta*, COMIECO, 2005.

Fig.1: Components realized with cellulose fibers deriving from the recycling of recovered paper and cardboard.



Stefano Perego
Politecnico di Milano, Italy

Solar control in the architectural composition

Scientifics studies and tradition heritage of solar control. A revalutation

The theme of the solar control in architecture does not only concern technical issues; it is related closed to the relationship between the shape and the light which is a properly architectonic theme. Architecture, according to Le Corbusier, *is skillful play of volumes under light*. The plastic properties of the architecture are underlined by the light, the shadow that the forms generated on other. Henri Focillion argues that «*The light illuminates not only the internal mass, but also working with the architecture to give it its shape. It is indeed, itself, shape, since its rays, sprizzati from certain points, are compressed, thinned and theses, to come and hit the membering of the structure, more or less collected, highlighted by projections or not, precisely in order to calm, or to play the light*»[1].

Edward Hopper says at the end of his life: «everything I always wanted to do was paint sunlight on the wall of a house». This statement returns the value given for all its activities and research on the theme of light and it represents the need to address this issue with a patient research in architecture.

In fact, unlike a painting that describes a specific moment when the light with a precise angle illuminates an object, the research on light in architecture includes the variations due to the passage of time, varying the position of the sun during the day and seasonal variations that mark the day and the rhythm of human life. The patient search for the subtle play of volumes under the light, then, is added as the need and character of the architecture that makes this even more complex and fascinating research.

If we should frame the issue of light and solar control in architecture in a functional point of view it does not closed to the architectural composition. In fact such a conception of the topic of solar control is often confined to the experiences, interesting or not without distinction, in the context of *functionalism.*

The formal heritage of architecture delivers a great catalogue of examples and references about the elements of solar control: the arcades, lodges, mobile systems such as tents and other systems belonging to architecture and appear as formal solution of controlling the light. The perforated elements in a precise and detailed design of the Eastern vernacular tradition (reflected, for example, in the work of Hassan Fathy), as well as large porches by Schinkel are the significant architectural elements and control of light and solar heat.

This research now takes on the character of the priorities considered "*flattening*" formal spread promoted by a misguided idea of modernity, the prevalence of building systems which allows rapid and low cost by the glass industry that points to the use of large surfaces low emissivity glass. These contain, at the moment in which are installed in a building, a large amount of energy, called "grey energy", incorporated during the production process. Technical innovation on the solar control in architecture cannot be sustained without a reconsideration on the architectural tradition and the different studies developed in the decades before us.

About the studies on solar control the experience of Victor and Aladar Olgyay represent the last stage of studies and scientific application on this topic from Modern Movement. The main part of their activities was developed carried out in the U.S. during the '50s when energy policy was entirely directed toward the use of fossil fuels boundless.

In fact, thanks to the '60s low-cost energy and the development of air conditioning systems a trend that has resulted in a shift away from any relationship with nature has been implemented. Today, after five decades and considering the need to significantly reduce the use of non-renewable sources – especially in construction – this trend seems to be still real. This is the background to the work of the brothers Olgyay. They did not have much prominence in the early and remained almost unknown except in certain specific areas of research. However, were taken into account since the '70s, when the urgency of the crisis brought energy issues in their cases in the architectural debate.

The techniques developed by Olgyay are valid *design tools* that allow you to explore the specific character of the solar control elements. It is in this sense that the tools are to be understood that Olgyay have developed during their long career, not as a means of determining the shape of mechanical elements, but as control of the compositional process. This is not an underestimate for the critical reading of their work.

In addition to solar radiation at different orientations, the Hungarian brothers take into consideration daily changes in air temperature within the theory of *Sun-Air*. This aspect assumes even greater significance when it is related to the different climatic regions in which is commonly subdivided the planet. In a temperate climate, for example, in the spring we need to have heat and light in the middle morning and afternoon hours. But this is not valid for overheat regions where it is necessary to protect from the sun and heat from the early morning hours. It is easy to deduce that the *Sun-Air* theory also includes the regional variable (such attention to the regional figure has a close relationship with biology, the link is strong, often taken from Olgyay, with human nature).

Resource conducted by Olgyay brothers show a close relationship with those developed on the residence during the Modern Movement by Alexander Klein, Ludwig Hilberseimer. The more clear relationships can be found with the work of Ludwig Hilberseimer, in particular with regard to the studies about the relationship between the penetration of sunlight in the rooms and the density.

The validity of the work Hilberseimer, which devote a very brief note of their text *Design with climate*, the Olgyay appear somewhat skeptical. With constant reference to their valid Sun-Air theory recognize a level of approximation in the German master who, in my judgment, is not true.

Hilberseimer in their considerations about solar orientation, figured in *The New City*, does not take into account the air temperature, especially for orientation to the west. «*The beneficial effects of the ultra-violet rays may be obtained only when the sun can penetrate into the room at the season when they are at their maximum intensity - the season between May and September and the hours of 8 a.m. lo 4 p.m. Here again the south, southeast, and southwest orientations are the most advantageous, inasmuch as the maximum sunshine, for rooms so oriented, is reached during the hours between eight and four. Orientation toward the east or west is unfavorable because most or the sunshine enters those rooms earlier or later in the day*». And yet, about the indispensable protection from the sun in summer and the necessary penetration in winter, Hilberseimer writes: «*Our desire for sun in winter is matched by our need for protection against sun in summer. Here again our investigation shows the merit of the south, southwest, or southeast orientations. The summer sun does not penetrate deeply into room so oriented.*

The sunrays do, however, strike the outer walls or the dwelling and heat them so that the temperature inside goes up. To achieve maximum benefit from the orientation suggested, we must cope with this problem»[2]. Hilberseimer knows perflectly the dynasmic of daily temperature related with different orientations. Hilberseimer doesn't approach the solar control, limiting the indication of research that emerges in his words (in fact marginally the question of the project as green as the instrument of microclimate control). Moreover the Olgyay' approach does not provide a typological remark unlike what does Hilberseimer who pushed his considerations about orientation related to distribution of apartments and in generally with the typological studies.

The Olgyay's method that permite to evaluate the validity and the role of a solar control element and permite to understand any possibility of change is considered as a control *instrument* of the compositional process. This control has to be considered in a process in which the composition at the center of the formal definition of the architecture and its elements. In addition to the design of architectural elements, the project takes on a strategic significance of the trees.

As shown by the studies of Olgyay trees can be considered as a tool for control of solar radiation, especially for their characteristics of seasonal variability. The changing seasons provides shade during the heat wave and the penetration of sunlight in winter when the trees have no leaves. Hilberseimer also recognizes the quality of the trees in the area of solar control: «*An old Chinese philosopher suggested planting trees at the south of the house. The shade of these trees would protect the house in the summer, he pointend out, and in the winter, when the trees were bare, the sun could find uninterrupted access into the rooms. There is much wisdom in his suggestion*». Mies in his Farnsworth house, for example, related with the trees and put below those the house in steel and glass[4].

The experience of Le Corbusier in Chandigarh. The Tower of Shadows as a didactic example

At the center of the great plan of the Park of the Chandigarh's Capitol, Le Corbusier built a whole of structure called Fosse de la consideration that consists of several demostration buildings about the principles adopted during the design process of the entire plan. The Tower of Shadows, still visible, is a demostrative construction about the different reasons of the elements of solar control forms. It stands as an ordered set of solutions, a real catalogue. The denomination "tower" does not correspond to the real character of the building, that name located in the Tower of the winds in Athens an ancient architectural reference and is measured with the tradition of building construction related to reading astronomy of Indian culture.

The construction made of reinforced concrete, the material of which is constructed the whole Capitol, is composed of two parts with a square base, of which the smaller part is inscribed in the larger part and rotated with respect to this by 45°. The lower part is situated in such a way as to have its four sides oriented according to the cardinal points. It is built only on the east side, south and west, the north, for which they are not necessary components of solar control, so it is completely free to pick from Parliament Square during the whole day long the shadows made by the elements. With the tower of Chandigarh is well staged theater of shadows in architecture, every day for every season. The rotation of the box top can also cover guidelines northeast, southeast, southwest and northwest. Inside the building is completely empty and occupied only by circular pillars that support it. The bottom, side, 15.50 meters in height is divided into three levels of inter-seater to 2 meters and 26 centimeters (as well as recurrent headroom in the works of Le Corbusier and corresponding to the Modulor). The three levels are defined by three horizontal planes whose depth measuring 1.55 m (one-tenth of the width of the parallelepiped) between which are arranged the various solar shading second of the relationships clear.

Their nature depends, of course, to the orientation. To the east facade of these elements are configured as concrete blades inclined at 45° from normal to the facade. On the south the vertical elements, more sparse but still at a steady distance, besides the task to subdivide the facade, support an additional order of horizontal planes at half oh the floor height. Those elements have the role of shielding the sun in the hours around noon. The shading places on the west side, which appear very similar to those posed on the east, they actually have different characteristics.

While maintaining the same thread, they have an different inclination from the elements studied for the east facade, because they must protect the interior from the hot sun in the afternoon during the summer season. The aim of the major inclination of those elements is relative to create a real barrier to the sun.
Le Corbusier, according to his method of proportioning, with decreasing size of the brise-soleil and the upper floors of their mutual step, aims to highlight, in the compositional process, the strong correlation between the single element (the brise-soleil) and the overall design of the façade characterized by the shielding.

The shape and arrangement of these elements were designed by Le Corbusier through the means of representation of our own discipline, through the elements of descriptive geometry and the theory of shadows. Today, thanks to advancement in the field of representation and the virtual computing, once the checks carried out manually, can be made more precise through some software that can give us back the image likelihood of the project in relation to the natural conditions under which the project is compared. With these systems have carried out some simulations to help understand the reasons and also to grasp the critical aspects of examples like this tower of shadows of Chandigarh.

For definitions of these representations was followed by a classical method already known, as was illustrated in these pages, the first scientific analysis on the sunshine of the last century. This method envisages that the different representations are carried out in significant periods. The Tower of Shadows was made representations to the solstices and equinoxes in five different times of the day. Before continuing in the description of the different phases considered, that Chandigarh is located a short distance from the north tropical. This fact, even before knowing specifically the shadows of the shielding elements in the project, provides a general indication about the solar path at this latitude that as early as the settlement choices plays a significant role.

The simulation was carried out in stages. With scientific analysis have examined the various conditions resulting from exposure of the elements in the solar path at different times of the year in certain specific times. From the variation of the shadows on the winter solstice (December 21), the fall equinox (March 21), and the summer solstice (June 21), emerges as during the period less hot the only elements with the vertical angle of 45° allow the light to illuminate and heat and also heat the central parts of the building. From March when the average temperatures of the morning peaks reach relatively high and when the sun approaches the zenith, the vertical elements along the horizontal ones excluded completely from solar radiation. If we did a translation of this system to a continental climate such as ours it would include the inadequacy of such solutions, because, precisely in the middle periods, spring and autumn, we need to allow the light and heat to bring benefit to indoors.

The different inclination to the west side of the elements that enclose more than the east facade. The reasons for this higher closure are to be found in the phenomenon that has already been so in the general way of describing the sunshine of the buildings. The heat load on the west is nothing compared to the east. The higher temperature in the afternoon together with the direct solar radiation creates a discomfort in the rooms facing on the west. It is therefore necessary to close mainly the facede. This inclination also provides the refraction of light that bounces between elements due to shading, and decreases its energy is spread over the interior, also the role played by horizontal brise-soleil.

Of course The Tower of Shadow in Chandigarh is an emblematic example in studies of solar control and is a manifesto that makes clear the principles and reasons that underlie the reflections on the relationship of architecture with nature and its entirety. This construction even in its elementary skeleton, is an architectural work whose parts, dimensioned by the Modulor, are related to each other through harmonic relationships.

Bibliography:

Sergio Croce, Tiziana Poli, *Case a basso consumo energetico. Strategie progettuali per gli edifici a climatizzazione spontanea in Italia*, Il Sole 24 ore, Milano 2007

Henri Focillion, *Vie des formes*, Ernest Leroux, Parigi, 1943, tr. it., Sergio Bettini (a cura di), *Vita delle forme*, in *Scultura e pittura romanica in Francia*, Einaudi, 1972

Le Corbusier, *Œuvre complète 1910-69*, Les Editions d'Architecture Artémis, Zurich, 1986

Aladar Olgyay, Victor Olgyay, *Solar Control and shading devices*, Princeton University Press, New Jersey 1957

Victor Olgyay, *Design with climate. Bioclimatic approach to architectural regionalism*, Princeton University Press, New Jersey, 1963

Vittorio Pizzigoni (a cura di), *Ludwig Mies van der Rohe. Gli scritti e le parole*, Einaudi, Torino, 2010

Notes:

[1] Henri Focillion, *Vie des formes*, Ernest Leroux, Parigi, 1943, tr. it., Sergio Bettini (a cura di), *Vita delle forme*, in *Scultura e pittura romanica in Francia*, Einaudi, 1972, p. 241

[2] Ibidem, *op. cit*, p. 85

[3] Ludwig Hilberseimer, *The New City*, Paul Theobald, Chicago, 1944, p. 85

[4] Vittorio Pizzigoni (a cura di), *Ludwig Mies van der Rohe. Gli scritti e le parole*, Einaudi, Torino, 2010, pp. 211-222. (Traslate by the author):
Student: How do you explain that his works always display box solutions?
Ludwig Mies van der Rohe: First, it depends to the block that you have - a city block. You know, you are not free.
S: I speak not only of the Seagram Building. For example, in the house Farnsworth there is nothing around, from all sides, but she applies the same setting. I wanted to know if you consider this house completely honest.
LMvdR: Did you see it?
S: Yes, certainly ...
LMvdR: Did you see it? You saw the trees around?
S: This adds something only after it has been made to compensate ...
LMvdR: No, the trees are there for a hundred, hundred and fifty years.
S: Yes, but depends entirely from trees?
LMvdR: Well, she is talking of building orientation. We put it next to the trees, so that in summer receives the most shade possible.

Katia Perini
Università degli Studi di Genova, Italy

Vegetation, architecture and sustainability

1. Introduction

Greening the building envelope is a rapidly developing field in the words of ecology, horticulture and built environment, since it's a is a opportunity for combining nature and buildings (linking different functionalities) in order to address environmental issues in dense urban surroundings (Dunnett and Kingsbury, 2008; Bohemen, 2005).
The ecologist theories have contributed to spread a growing awareness of the consequences of our actions at a global level and to the formation of the concept of sustainability in architecture (Bateson, 1972; Jonas, 1979; Latouche, 1982). The attention towards themes regarding ecology and sustainability in the last fifty years has developed with different intensities in parallel to a series of political and historical events, such as the first big energy crisis, the establishment that the hole in the ozone layer actually exists, or the international submit (Brundtland, Kyoto, etc.; Cassinelli and Perini, 2010). A commercial exploitation of the widespread ecological awareness has been noticed by several authors, which is often deceptively influenced by mass media all to the damage of the knowledge of reality (La Cecla, 1991; Tiezzi, 1991). In architecture the cases of formal choices based on the need to communicate and make explicit the sustainability of a project following the actual market logics, even regardless of real eco-compatible aspects, is ever more frequent (Cassinelli and Perini, 2010).

The first projects which revolved around nature and the environment, such as the works of the American SITE group, the Argentinean Emilio Ambasz, the Austrian artist Friedensreich Hundertwasser, and the Italian Gabetti e Isola, were published in this period (Toraldo Di Francia, 1989; Pisani, 2006; Hundertwasser, 1990; Ambasz, 2010). In many of these projects a strong interest for aesthetic and symbolic aspects connected to the nature can be noticed, as in more recent projects; only starting from the nineties green starts to be considered as a microclimatic and environmental control device, after the first researches developed about this topic, especially in Germany (Köhler, 2008).
The integration of vegetation in architecture allows exploiting the surfaces (both horizontal and vertical) of the buildings in dense urban areas, to improve the environmental conditions, acting both on the effects, such as the improvement of air quality, and on the causes, improving building envelope performances which results in energy saving (Ottelé et al., 2010, Perini et al., 2011).

The main benefits connected to a green building envelope regard environmental practices, economics, and social aspects, as the greenhouse gases output reduction, climate change adaptation, air quality and indoor and outdoor comfort conditions improvement, urban wildlife (biodiversity), storm water runoff generation reduction, etc.; these benefits concern several fields, which are all related and operate at a range of scales, some only work if a large surface in the same area is greened and their benefits are only apparent at a neighbourhood or city scale; others operate directly on the building scale (Dunnett and Kingsbury, 2008).

In the last few years the number of projects characterized by the use of vegetation seems to be continuously growing. This can be defined as an ecological element par excellence and it can be used to communicate and make explicit the sustainability of a project, besides for its positive influence on the environment and on the building microclimate, as it will be shown.

An iconographic analysis on architectural journals (with an international reputation) is focused on identifying a possible growth of interest, one or more design approaches, and the presence of aesthetic and formal characters connected to the integration of vegetation in architecture; therefore the following research questions can be formulated:
- Has the interest for vegetation in architecture actually growing in the last few years?
- Is it possible to connect any interest grown to a specific event or situation?
- Which are the integration modalities of green elements in architectural projects?
- Is it possible to define one (or more) recurrent design approach? With which implications?
- Does an aesthetic of sustainable architecture connected to the integration of vegetation exist?

2. Increase of interest and integration modalities

An iconographic analysis allows answering the research questions identified. This is done on all the numbers of Domus (edited in Italy) and The Architectural Review (edited in England) published from 2000 to 2010. 315 projects characterized by the integration of vegetation (where green plays a role in the architectural conception) were found inside 131 numbers of The Architectural Review. Considering Domus, inside 120 volumes of the journal 156 projects were found and analysed. These were classified (for both the journals) following two different parameters; one regarding the role (relevance) played by vegetation in the project (relevance low, medium, high); the other regarding the integration type, which was directly deduced from the project analysis (fig. 1). These integration types identified are useful to understand the actual phenomenon and can be both assigned to a project at the same time. These are: vertical green, green roof, ground treatment in the vicinity of the building, green element penetration, and camouflage.

With respect to the amount of projects published we can notice, for Domus, a noteworthy leap in 2006, when the number of projects goes from a mean of 6-7/year to 21, with a peak up to 28 projects in 2008 and 27 in 2010. Looking at the graph regarding the projects published on the Architectural Review the trend is less linear. The number of projects published in the first years analyzed (2000-2003) is around 20-25; this decreases in 2004 with 17 projects and increases in 2005 with 38 and in 2006 with 35 projects. In 2007 we can see the highest peak (50 projects); finally in 2009 and 2010 it decreases again to 28 and 29 projects.

Considering the role (low, medium, high relevance) a proportional distribution can be noticed in the total number of projects in both journals. Observing, at the same time, the integration type graphs it seems that this doesn't influence the green element relevance; this happens only for the camouflage category, which is often connected to a high relevance (fig. 1). The different integration types are proportional to the total number of projects. This implies that the interest to the topic has actually grown in the last year but it didn't influence the major or minor presence of one integration type in particular (vertical green, green roof, ground treatment in the vicinity of the building, green element penetration, camouflage).

The growth of interest can be found, considering the journal published in Italy, starting from 2006; for the English journal this is less evident but it can be connected to the 2005-2009 period. During this period (2005-2006) famous projects characterized by an integration of vegetation were realized. One of these is the Quai Branly Museum, designed by Jean Nouvel and the French Patrick Blanc (www.verticalgardenpatrickblanc.com). This project was the first of a batch, as the Herzog and De Meuron's Caixa Forum construed two years later in Madrid. Also in Italy, in the same period, the project Bosco Vericale (vertical forest; www.stefanoboeriarchitetti.net), which is now under construction, was presented by Stefano Boeri. This is a green skyscraper for a metropolitan reforestation and it can be defined (at least in a first phase) as a manifest or an advertisement spot for a more sustainable and green city.

3. Design approaches

The analysis of architectures published in the last ten years allows to define some analytical categories; these are suitable for studying the different design approaches found, which have an influence on the aesthetic outcome and functional characteristics. The categories proposed are useful to understand the current phenomenon and show different design intension. These are three: the integration of vegetation for the environmental and microclimatic control, the relation between architecture and landscape, and natural *maquillage*.

The first category, the integration of vegetation for the environmental and microclimatic control, implies a design that considers, first of all, the exploitation of vegetation characteristics to improve the buildings efficiency, environmental conditions and indoor and outdoor comfort. The different integration modalities of vegetation in architecture allow to obtain relevant environmental and microclimatic benefits, especially in urban area, as it enables combining nature and built space. As mentioned above, these benefits regard a wide range of scales; some have effects only if a large surface in the same area is greened (with clear results on neighbourhoods or cities); others are directly related to the building microclimate (Perini et al., 2011).

The benefits related to a larger scale are mainly related to the improvement of air quality, increased of biodiversity, mitigation of urban heat island, and storm water runoff generation reduction (Köhler, 2008). Green façades, roofs or a simple disposition of trees and shrubs allows improving the building envelope efficiency, the thermal comfort, and the visual, aesthetic and social aspect (Dunnet e Kingsbury, 2004).

The relation between architecture and landscape plays a central role, for example, in the work of Emilio Ambasz following the slogan "The green over the grey" (Ambasz, 2010). The Argentinian architect made some interesting considerations that can be helpful to understand in which direction his work goes. «Building new cities reusing old urban schemes or, worst still, making the same old mistakes, it is not what I tried to do. What I would like to propose deals with building a new green city, a city, which is not the kingdom of the house in the garden, but a house, which is the garden itself. I spent the last 25 years of my professional life working on buildings able to give back to the community the most green possible, following a design strategy that I like defining "green over the grey". Year after year, project after project, I kept on working on this idea elaborating a method, a typological catalogue which covers all the functional range of different buildings necessary for a new green town» (translation of the Italian original version; Pisani, 2006). This design approach (the relation between architecture and landscape) concerns an attention to the relation with the surrounding landscape that can totally camouflage the architectural element. Repishti (2008) defines it as an "aesthetic of disappearance". Therefore the use of green technologies can be an opportunity for a major integration of architectures in their context, also for retrofitting intervention, when a reintegration in the landscape is requested.

The third design approach, the natural maquillage, regards situations wherein design choices are mainly determined by an aesthetic intention connected to the exploitation of the perception qualities of green elements. Repishti (2008) defines «the use of plant elements in this new kind of cosmetics as a response to the growing rejection of the present image of the city». Examples of this are the green façade used as a car advertisement spot (designed by Temprano, Milan, 2011) or the above mentioned *mur vegetal* by Patrick Blanc, which are real works of art unrelated to sustainability aspects (Ottelé et al., 2011).
The design approaches identified can be found at the same time in the same project; although sometimes it is possible to find that one is more relevant.

4. Reference to a formal expressivity connected to sustainability

The interest increased found thanks to the research conducted on the architectural journals Domus and The Architectural Review can be related to a more sustainable approach to improve building efficiency and environmental conditions, but also to an aesthetic intention. This is connected to the perception of green, as the ecological material *par excellence* with the aim of communicating a project as sustainable. It is possible to assume that one or more aesthetics of sustainable architecture, related to the integration of vegetation, exist; as Pierluigi Nicolin (2008) writes «banally, we are witnessing the return of a truly neo-decorative attitude, that is to say something laid on top of, draped over relatively conventional structures. In the more interesting cases, however, the neo-organic image translates the conception linked to the new paradigm of reference into an architectural outcome. While expressing the new ideals, it goes on performing its legitimate task of imparting sense to a construction»; however, «can we forget that naturalistic, apparently "green", camouflage often covers up the eyesores produced by the very "concretization" that we are trying to combat?»
Also according to Marco Biraghi (2010) «the recipe is simple: saying the word "Green" is enough and magically everything changes: petrol, from pollutant, gets to be pulpy essence, architecture, from bulky and dirty object, gets to be a light and transpiring structure, the city, from chaotic pile of buildings and streets without direction and a way out, gets to be the Garden of Eden, the world, from unbearable and uninhabitable place, gets to be the best of the ones possible. The secret of happiness is green. Green architecture. Green design. Green life. The Green Triumph of a Green Life in a Green city in the Green Universe. For Green People» (translation of the Italian original version; Biraghi, 2010).

Biraghi's words are definitely provocative but show a critical attitude, which can be understandable in this period in which green skyscrapers, sustainable towers, and urban forests are defined as the architectural expedient able to guarantee a better life (La Repubblica, 25-05-2011, article titled "A forest pops up on a skyscraper to save the city" in one of the most important Italian newspaper).

5. Vegetation and environment

A wide replication of green envelopes can be a good opportunity to improve the urban environment conditions, as European cities tend to be densely built, becoming the scene of important environmental issues relative to pollution in the atmosphere (Legambiente "Mal'aria di città" 2011). Considering the difficulty in finding empty spaces for the plantation of vegetation in the urban fabric, the buildings themselves can provide the necessary space. The massive integration of vegetation in architecture allows exploiting the surfaces (both horizontal and vertical) of the buildings, to obtain relevant benefits and, consequently, an improvement in environmental quality and the inhabitants' wellbeing.
It is possible to classify the various advantages into main areas, such as aesthetics, environmental practices and economics, which are all related. Greenery improves the visual, aesthetic and social aspect of the urban area, which has a high influence on the economical value of a building or neighbourhood, and enhances human health. Urban green is widely recognized as therapeutic by a number of research studies proving, for example, that hospital patients who can see greenery out of the window recover more quickly than those who can not (Ulrich, 1986; Dunnet and Kingsbury, 2008).

The environmental benefits of greening the building envelope operate at a range of scale. Some only work if a large surface in the same area is greened and their benefits are only apparent at the neighbourhood or city scale. Others operate directly on the building scale. The benefits related to the larger scale regard mainly the improvement of air quality, urban wildlife (biodiversity), the mitigation of urban heat island effect, and the storm water management; the ones regarding the building scale concern the building envelope performances and the indoor and outdoor comfort (cooling potential, insulation properties, shading effects, etc.; Dunnet and Kingsbury, 2008; Köhler, 2008).

It is important, in avoiding that the green element only plays an aesthetic role, to relate the benefits obtainable with the environmental burden produced by the several systems for the integration of vegetation during their life span. The several green element integration types, such as green roofs or vertical greening systems, very differently influence the formal, functional, and performance of the built space. Green roofs are a widespread integration type and many researches show advantages and disadvantages of their use; from these studies we can see that green roofs are, in many cases, an environmental and economic choice preferred compared to other covering layers (Kosareo and Ries, 2006; Dunnet and Kingsbury, 2008). A life cycle analysis conducted by Ottelé et al. (2011) shows that vertical greening systems can have both a low and a high environmental burden due to the supporting material, durability aspects, maintenance needs, etc. of the several systems analysed; this study concluded that greening the building envelope considering the materials involved and taking into account all the benefits can be a sustainable option for new construction and retrofitting projects.

6. Conclusions

The perceptive qualities of the integration of vegetation allow to emphasize the sustainability of a project. Thanks to the iconographic analysis presented on all the numbers of Domus and The Architectural Review an increase of interest has been found starting from 2005-2006; the same period in which famous projects characterized by the integration of green elements in façade were realized. The increased interest found can be related to a more sustainable approach to improve building efficiency and environmental conditions, but also to an aesthetic intention connected to the perception of green, as the ecological material *par excellence*. The reference to a formal expressivity connected to sustainability can be associated, in particular, to two of the three design approaches defined in the research: the relation between architecture and landscape and the natural camouflage. The analytical categories identified don't mean to propose a unique classification. A design approach doesn't exclude any of the others; although sometimes it is possible to find out which is the one more relevant. It can be mentioned that the integration of vegetation is a complex issue and implies a critical evaluation of the benefits obtainable in relation with the built space and climatic characteristics, durability, maintenance, and economic aspects for all the life span of a component (Ottelé et al., 2011). All these aspects play an important role in avoiding that the green element only plays an aesthetic role.

Bibliography:

Ambasz E., *Architettura & Natura/Design & Artificio*, Electa, Milano, 2010.

Bateson G., *Verso un'ecologia della mente* (prima ed. Chandler Publisching company, 1972), Adelphi, Milano, 1977.

Biraghi M., *Green is the colour*, in *MMX Architettura zona critica*, Gizmo, a cura di Biraghi M., Lo Ricco G., Micheli S.. Emanuela Zandonai Editore, Rovereto, 2010.

Bohemen van H., *Ecological engineering, bridging between ecology and civil engineering*, Aeneas technical publishers, 2005.

Cassinelli G., Perini K., *L'estetica della sostenibilità*, in Eurau'10, Napoli, 2010.

Domus , Editoriale Domus, Milano: 2000, vol. 822-832; 2001, vol. 833-843; 2002, vol. 844-854; 2003, vol. 855- 865; 2004, vol. 866-876; 2005, vol. 877-887; 2006, vol. 888-898; 2007, vol. 899-909; 2008, vol. 910-920; 2009, vol. 921-931; 2010, vol. 932-942.

Dunnet N., Kingsbury N., *Planting Green Roofs and Living Walls*, Timber Press, Oregon, 2008.

Hundertwasser F., *Kunst Haus Wien*, Taschen, Germany, 1990.

Jonas H., *Il principio responsabilità*, Einaudi, Torino, 1979.

Köhler M., *Green façades – a view back and some visions*, Urban Ecosyst DOI 10.1007/s11252-008-0063-x. 2008.

Kosareo L., Ries R., *Comparative environmental life cycle assessment of green roofs*. Building and Environment 42, 2606–2613, 2006.

La Cecla F., Postfazione a F. Guattari, *Le tre ecologie*, Sonda, Alessandria, p.50, 1991.

Latouche S., *Faut-il refuser developpement? Elaboration rationelle et irratinelle des resources naturelle*, Institut des sciences economiques, Paris, 1982.

Legambiente, a cura di Zampetti G., Valentini V., Sciarra D., Le Donne K., 2011. *Mal'aria di città*, 2011. (http://www.omniauto.it/download/articoli/14883/Dossier_Mal_aria_citta_2011.pdf)

Nicolin P., *Biopolitica e architettura*, Lotus International , vol.135, Electa, Milano, 2008.

Ottelé M., Van Bohemen H., Fraaij A.L.A., *Quantifying the deposition of particulate matter on climber vegetation on living walls*, Ecological Engineering 36 154-162. 2010.

Ottelé M., Perini K., Fraaij A.L.A., Haas E.M., Raiteri R., *Comparative life cycle analysis for green façades and living wall systems*, Energy and Buildings 43 (2011) 3419–3429. 2011.

Perini K, Ottelé M, Fraaij ALA, Haas EM, Raiteri R., *Vertical greening systems and the effect on air flow and temperature on the building envelope*. Building and Environment 46 (2011) 2287e2294. 2011.

Pisani M., *SITE*, Edil Stampa, Roma, 2006.

Repishti F., *Green Architecture. Oltre la metafora*, Lotus International , vol.135, Electa, Milano, 2008.

Scalise I.M., *Spunta un bosco sul grattacielo per salvare la città*, la Repubblica, 25-10-2011.

The Architectural Review , London Architectural Press: 2000, vol. 1235-1246; 2001, vol. 1247-1258; 2002, vol. 1259-1270; 2003, vol. 1271-1282; 2004, vol. 1283-1294; 2005, vol. 1295-1306; 2006, vol. 1307-1318; 2007, vol. 1319-1330; 2008, vol. 1331-1342; 2009, vol. 1343-1354; 2010, vol. 1355-1366.

Tiezzi E., *Il capitombolo di Ulisse. Nuova scienza, estetica della natura, sviluppo sostenibile*, Feltrinelli, Milano, 1991.

Toraldo di Francia C., *SITE architetture 1971-1988*, Officina Edizioni, Roma, 1989.

Ulrich R.S., Simons R., *Recovery from stress during exposure to every day outdoor environments*, Wineman, J., Barns, R., Zimring, C., *The costs of not knowing, procidings of the seventieth annual conference of the environmental research association*, Washington DC, 1986.

www.stefanoboeriarchitetti.net

www.verticalgardenpatrickblanc.com

Legend

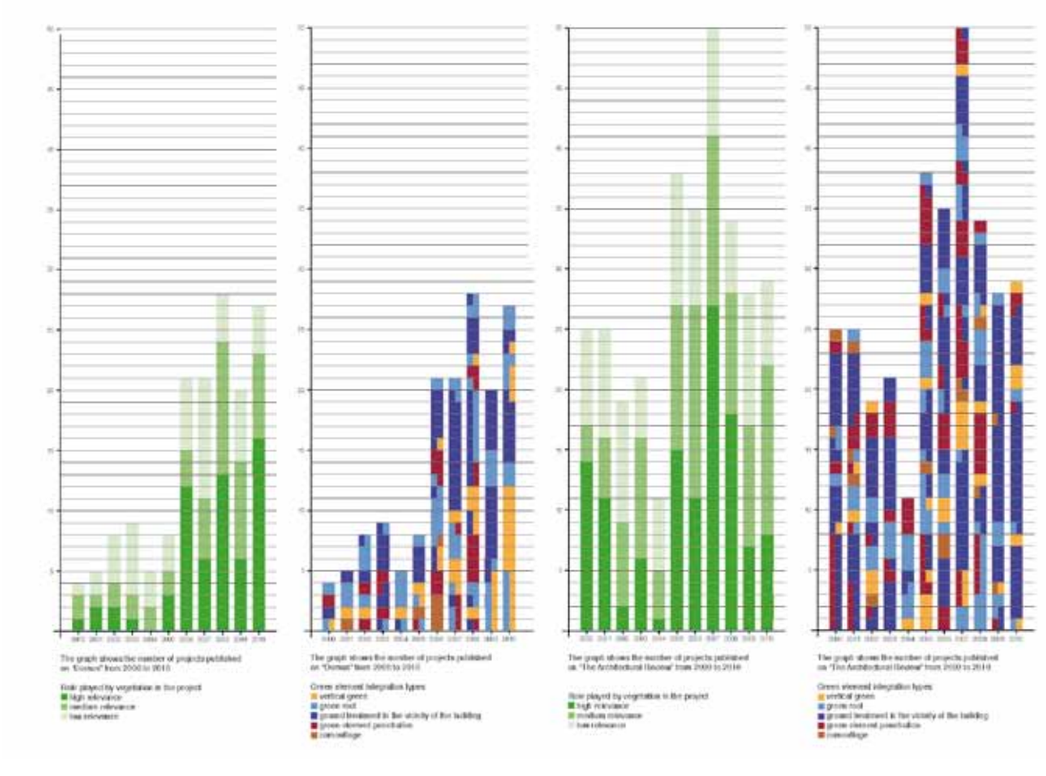


Figure 1. Number of projects published on "Domus" and "the Architectural Review" from 2000-2010 classified considering the played by vegetation in the project (relevance high, relevance medium, relevance low) and the green element integration types (vertical green, green roof, ground treatment in the vicinity of the building, green element penetration, camouflage).

Brian Sinclair - Somayeh Mousazadeh - Ghazaleh Safarzadeh
University of Calgary, Canada

Advocating for Agility, Adaptability + Appropriateness: Innovations + Inspirations for an Environmental Design of the 21st Century

Buildings traditionally prove static, rigid and intractable -- modification of existing building stock is costly, difficult and at times implausible. Today the world has dramatically changed, with advancements in technology, expectations of society, and a quest for sustainability all driving a push for more agile, adaptable and appropriate Architecture. The authors critically reviewed theories & practices of 'open building'. Responding to issues culled from this study a framework was developed which celebrates three key areas of 'spatial', 'functional' and 'aesthetic' flexibility. Each of these categories contributes to the richness of 'Agile Architecture'. A futuristic Architecture proves a hybrid of spatial, functional and aesthetic flexibility -- being able to readily adapt to pressures in real time. Agility arguably benefits from, and demands, such a connective integrative strategy. The present framework promotes a holistic approach geared to more responsive, resonant and resilient Architecture. The research and framework considers progress to date and envisions vital steps to heightened agility, adaptability and appropriateness in Environmental Design.

Introduction

"*We are now living in the age of a paradigm already evident in politics, science and technology.*
This cooperative spirit leads to an architecture of participation."
Kisho Kurokawa

Traditionally architecture has proved static, rigid and intractable. Intense building over the last century created situations whereby modification of existing building stock is costly, difficult and at times implausible. Beginning in the mid-twentieth century architects began to explore more open, mutable and responsive ways of building. Visionary architects such as Kisho Kurokawa (Japan) and Cedric Price (UK), in an effort to envision more resilient & robust solutions, explored methods that provided greater user control, more modification, and heightened customization.

As opposed to buildings in which users needed to adapt to environmental constraints, these progressive designers imagined spaces that interactively adjusted to user needs. A significant challenge to these innovators was a serious lag between thinking and technology – construction proved unable to address concept. Today the world has changed in striking ways, with advancements in technology, expectations of society, and a quest for sustainability fueling a push for more agile, adaptable and appropriate Architecture. Within this milieu designers must aim to provide solutions which better accommodate needs of increasingly diverse communities. One of the authors (Sinclair, 2009 & 2010) delineated a Holistic Integrated Framework for Design + Planning. This novel approach, being deployed & tested across multiple scales, considers symbiotic interplay of Fitness, Agility, Diversity and Delight. The present paper expands on Agility (as a subset of said framework), with a particular focus on re-conceptualizing the manner in which Architecture might heighten its suitability regarding user needs, demands, desires and expectations. The approach, while acknowledging rich historical developments in 'open building', proposes a new lens through which to view agility, adaptability and appropriateness of design in our current, complex and ever-so complicated ethos. (Fig. 1)

The word 'flexibility' is important within the Open Building (OB) lexicon. It describes structures which can be adapted in response to the dynamic process of habitation (Eldonk & Fassbinder, 1990). The current paper expands on the notion of 'flexibility' from different perspectives and, through the introduction of a framework, aims to shift the user's role in design and practice. A sense of control over space psychologically enables users whereas being unable to change one's surroundings can result in anxiety, distress and discomfort. The proposed framework, as a provocative mechanism, examines agile architecture through notions of 'spatial flexibility', 'functional flexibility' and 'aesthetic flexibility'. While this model elaborates on how each of the categories of flexibility contributes to the concept of agility, it further promotes an overarching mindset whereby all three cooperate as a new and more sustainable system in the design of enduring buildings. 'Resilient' design as a hybrid of 'spatial', 'functional' and 'aesthetic' flexibility responds to users' needs to reimagine + reconfigure the space, as they wish, in real time. Practicing 'open building' requires an increasing technicality that can aptly be accessedlapplied by today's design professionals and building industry. This research reconsiders agility & 'open building' through a more 'designerly' perspective and postulates a novel strategy & philosophy for realizing more responsive, responsible and fitting Architecture for the 21st Century. (fig. 2)

Spatial flexibility

Spatial flexibility was among the first drivers of 'open building'. It refers to capacity to change the spatial structure of a building. Its historical roots can be traced back to traditional Japanese single family dwellings - an open cubic structure subdivided into smaller spaces by means of sliding walls (shōji screens) in a ratio of "tatami" mats. Early multi-family dwellings with spatial flexibility appeared in Dutch housing projects.
The idea was introduced in the 1960s by the Stichting Architecten Research (SAR) and through influential architects like N. J. Habraken. Habraken distinguished between 'support' and 'infill' -- where support refers to what the individual user cannot change, while infill is what the individual user can freely decide and act upon (Eldonk & Fassbinder, 1990). In this analogy, the structure and exterior shell is fixed and designed to accommodate flexible and changeable infill systems based on users' needs. Plans tended toward large rectilinear layouts that are subdivided to smaller spaces by moveable interior partitions. Similar to Japanese traditional houses, flexible infill is achievable by means of movable interior panels and foldable partitions. Interior walls are not coupled or, as Stephen Kendall (1999) notes, "entangled" with structure. Therefore, each household was able to layout interiors prior to occupation based on spatial needs with no disturbance in main structural layouts. The present paper views spatial flexibility as basic to agile + progressive Architecture.

Guideline
Spatial flexibility realizes the user's needs and desires to make changes in the composition & arrangement of space. It provides buildings with greater flexibility and open systems, which ultimately afford users more control over the configuration and utilization of space(s).

Elaboration
In North America, the typical approach to creation of spaces tends to be fixed and static. For each activity, a distinct space is crafted that may not be efficient especially across the fourth dimension. Delegation of a separate and largely immutable space to each function unnecessarily grows a building's size.

This approach results in spending more money and consuming more materials for construction as well as incurring higher costs for maintenance, operation and energy after construction. Spatial flexibility considers the capacity of change in spatial structures in both long and short-terms. Spatial flexibility is responsive to momentary changes in users' needs; therefore it accommodates change in the short-term. Spatial flexibility allows unfolding of different functions within a singular space; therefore, it considers long-term change in spatial needs. In this system, the plan should be divided into spaces that change and spaces that do not. The alterable spaces are divided with use of sliding, folding, retracting, collapsing and moveable walls that can be reconfigured and rearranged. Consideration needs to be given to geometries beyond rectilinear and to constructions beyond orthogonal. Contemporary building technologies offer extraordinary potential.

Volume
Spatial flexibility is, traditionally, achieved in 'plan' while the third dimension is downplayed or dismissed; however, it is essential to consider 'volume' in our approach. This consideration allows for greater flexibility and considers spatial possibilities in the fourth dimension (i.e., across time).

Flow
It is crucial to consider flow between spaces when users alter and adjust spatial layouts. It is important to consider flow of space in all iterations, to delineate which space is being shared, and to pay attention to circulation between those spaces.

Order
In a flexible plan, there should be little or no definite hierarchical order between spaces. In spatial flexibility focus is on three dimensional (horizontal & vertical) organization and sequencing spaces in a way that allows for differing compositional arrangements. The spatial order changes as users alter plan and volumetric configurations to match needs.

Functional flexibility

Functional flexibility refers to capacity of the infill to allow different functions to unfold and be accommodated. The first attempts to account for future changes in program with minimum demolition can be traced back to Gerrit Rietveld's practice (circa 1920s). His goal was to prefabricate a block in which services such as plumbing, sinks, toilets and chimneys were concentrated (see Eldonk & Fassbinder, 1990), with the rest of the plan then able to be freely composed and modified. In the post-war boom the demand for social housing dramatically increased with the 'open building' movement meeting needs for spaces with functional flexibility. This was coincident with escalating land values, which meant smaller and more efficient dwelling units contained in multi-residential buildings. In the Netherlands, architects concentrated on social housing, which had enormous effect on theories related to 'open building'. In many mid-20th century buildings, the plan was divided into equally large rooms that were multifunctional. They were bedrooms at night, living rooms in the evening and on weekends, and study areas during the day. Mies van der Rohe specifically studied the day and night cycles in dwellings. He was interested in the fact that diurnal rhythms affect the function of spaces. Many architects addressed this concept by integrating built-in and transformable furniture in buildings so that rooms could be easily reconfigured. The functional aspect of the Support and Infill was so crucial that form was sacrificed and standardization was inevitable. In Japan, this idea saw experimentation in the Kodan Experimental Project (KEP): the building was divided into five subsystems of: "structure, skin, interior finishes, service or sanitary systems, and air conditioning equipment" (Kendall, 1999). For each subsystem, very specific performance was defined and manufacturers assigned to develop suitable components. The present paper views functional flexibility as basic to agile + progressive Architecture.

Guideline
Functional flexibility allows different uses to unfold and be accommodated within the same structure with minimum amount of difficulty, disruption and demolition. The Architecture accommodates changing activities of users and diverse demands on facilities.

Elaboration
Functional flexibility is one remedy to confined space contained in especially small structures. In such buildings, functions may become limited due to spatial limitations. Functionally fixed spaces can limit change in the program of the building over the course of time. As spaces in conventional buildings are subdivided into smaller enclosures to accommodate current functions, demolition proves inevitable to accommodate future generations and expectedly different programs within the same structure. In our functional flexibility approach, plans|volumes should be designed in ways that are adaptable|mutable to different needs. This can be achieved by reconfigurable furniture|fixtures|fittings - space can be easily rearranged to accommodate different functions. In this methodology, the rooms can adapt to future changes in program with minimal or no demolition, as they are programmatically neutral and geared to transformation.

Program
Functional flexibility accommodates a range of programs in a singular space. This accommodation is achieved through larger divisions incorporating stackable furniture, mutable fittings, and reconfigurable fixtures. Assemblies and systems, at a human scale and ergonomically sensitive, prove central to the equation.

Productivity
Buildings with functionally flexible plans are productive as they address diurnal cycles, ever-changing numbers of occupants, different age groups' spatial requirements and programs. They promote constant & optimal usage of space, which is specifically efficient in terms of a plethora of operational considerations.

Value
Functional flexibility appreciates users of space. It respects the dynamic nature of occupants and the fact spatial requirements change over time. Functional flexibility also preferences value above cost; considering life cycle impacts and extending financial efficiency and project viability beyond conventional approaches.

Aesthetic flexibility

Aesthetic flexibility refers to the capacity of altering a building's form, façade arrangement and identity. Concerns of rigidity in form and character, as well as lack of identity, were raised in the 1960s as protest against standardization and mass production. Hertzberger (1962) disagreed with the repetitive nature of such Architecture, suggesting that without inherent capacity for change such environments could not serve different functions. The static nature of the 'support' is in paradox with the dynamic nature of dwelling. Functionally flexible design by its own cannot solve this paradox. A mindset is warranted that seeks a more intricate relation between form and function and abandons the "collective interpretation of individual life pattern" (Hertzberger, 1962). This idea reintroduces the user as an actor for whom the building should facilitate the performance. Such concepts seem perhaps closer to contemporary and emerging approaches to 'open building', whereby widespread adaptation and 'on-demand' customization assumes a paramount position. In this pioneering approach, there are barely any fixed and static elements in the building other than the primary structure -- the new strategy is to tailor the building to suit the current uses and users as well as any future changes in either or both. Aesthetic flexibility changes the clients' role in design processes; it requires more public participation during design phases. Future tenants, in this approach, participate in designing infill as well as influencing disposition|appearance of forms & façades. This participatory approach transforms the typically prescriptive regulatory milieu in order to permit stakeholders and architects|builders to collaborate, innovate and perform in bona fide decision-making. Advancements in technology have opened up opportunities around this concept. Ideas of 'cybernetics' and 'mechatronics' allows for highly responsive and interactive skins and infills. By the means of sensors, responsive architecture can more readily react to users' desires as well as responding to variable environmental conditions. The present paper views aesthetic flexibility as basic to agile + progressive Architecture.

Guideline
Aesthetic flexibility provides a building with character|expression that can change, communicate with neighbours, and more meaningfully animate context. Buildings are interactive within their settings and better able to respond to circumstances.

Elaboration
Mid-20th century 'flexible architecture', most notably in Europe and Asia, was successful in resolving numerous issues of emerging housing. Flexible infill within fixed structures could reform and shift to create different spatial configurations according to users' needs. The 'open concept' allowed different programs to unfold within the same structure with minimum demolition and costs. However, the 'open building' guidelines soon produced repetitive plans within monotonous structures as primary attention was paid to developing reconfigurable infills. Monotonous buildings and aggregate communities with a lack of identity are potential by-products of 'open building' practice – with oversimplification and repetition potentially resulting from the need to manage complexity by limiting 'formulas' and by routinizing 'solutions'. Aesthetic flexibility espouses capacity for change in form and façade; it brings about unique identity that can reflect users' personalities, communicate with surroundings and activate context. Advancements in digital technology and next generation cybernetics enable extremely dynamic façades that embrace energy generation and sculpturally shift in form.

Brian Sinclair - Somayeh Mousazadeh - Ghazaleh Safarzadeh
University of Calgary, Canada

Innovation
'Aesthetic flexibility' deploys innovations in technology to characterize buildings and provide metropolitan icons. Witness façades in which automated shading apertures constantly change; to provide comfort for the users and to create dynamic & poetic patterns. Façades populated with minuscule wind turbines and advanced photovoltaics contribute energy while creating performative scenes within the city. Digital façades serve as urban-scale messaging or 'building-as-billboard' attractions.

Interest
Creating buildings with adaptable expression intrigues many stakeholders. Not only are users more satisfied, as they gain greater control to exercise preference, but also the broader urban realm benefits from rich aesthetics and imaginative dynamism of such buildings. That said, questions surface around architectural controls, decision management, and balance between authority/control and democracy/choice.

Balance
'Aesthetic flexibility' provides balance between standardization of dwelling and individual interpretation of living. Such 'aesthetic flexibility' is about 'customization' and 'design-on-demand' – such inventive systems afford accessibility and empowerment to users. Mechanisms for customization introduce tremendous design opportunities and ensure more flexibility over time.

Responsive - Resonant - Resilient

At the framework's core are key factors concerning a building's (and an architect's) obligations and opportunities. These aspects are cast as responsiveness, resonance and resilience.

Responsive
Skin, structure and infill should be equipped with enough elasticity to respond to environmental conditions, adjust to users' needs, and generate energy. The building is not neutral and standalone relative to its users and context -- rather, it is alive and ecologically synergistic.

Resonant
'Open' buildings should strike a meaningful balance between interior + exterior and between spatial, functional & aesthetic aspects. Focusing on reconfigurable 'infill' should not overshadow potentials of the exterior shell's dynamism, customization and energy generation. Ideally resonance should be system-wide.

Resilient
Building systems should be designed with capacity to cope with future changes with minimum demolition, cost and waste and with maximum robustness, mutability and efficiency.

The 'futuristic' Architecture envisioned via our framework proves a hybrid of spatial, functional and aesthetic flexibility -- being able to effectively & efficiently respond to needs to intuitively reconfigure space, adapt to future changes in program and reflect users' desires in real time. Each of the three categories of spatial, functional and aesthetic flexibility contribute to richness of an expanded + reconsidered 'open building' concept; however, each on its own will not be able to resolve the paradox of permanence (stability) – in respect to long term community interests – and change (mobility) – in respect to short term individual preferences. Our future Architecture, considering current environmental, social and economic issues at play, calls for designing structures that are fully adaptable from inside out, across manifold scales and through time.

Applications - Implications

There are exceptional projects (e.g., Next 21 Japan) where OB principles have been applied to create places that adapt well to diverse & shifting demands. With respect to the conceptual framework delineated in this paper, such buildings travel serious distance in considering spatial, functional and aesthetic flexibility. However, as OB continues to develop the authors call for an even stronger push towards holism and integration of design, planning, site, structure, infill, inside, outside, systems, users/uses, flexibility and adaptability. In building interiors stable and accommodating infrastructure should allow for diverse infill capable of greater malleability & elasticity. Buildings should take into account different 'needs' and 'time' aspects both in terms of inhabitation & occupation and also relassembly & relconstruction. While mutability of internal spaces is vital, also creating exterior walls as independent systems that can be simply reconfigured, revised and/or replaced provides users the ability to freely transform the form of the façade and to modify numerous qualities of space (e.g., size, views, indoor versus outdoor, look & feel, etc.). Our framework urges aggressive advancement of concepts based upon emerging technologies, changing demographics, growing expectations, concerns around sustainability, open-mindedness, and absolute attention to and pursuit of systems, integration and holism. (fig. 3-5)

Synopsis + moving forward

"*People are very open-minded about new things - as long as they're exactly like the old ones.*" Charles Kettering

Architecture in the 21st Century, a period of dramatic movement + intense change, must be far more responsive, resonant & resilient than designs for days long past. Rather than requiring users to shift, twist and surrender to fit into static environments, a new Architecture reacts, adjusts & accommodates. The present paper postulates a conceptual, conceivably contentious, frame with which to more aggressively and fruitfully consider, create and construct such design. It aims to transition mindsets + methods of Architects + Architecture, in Kurokawa's spirit, from an age of the machine to the age of life. In our proposition for reconsidered and more appropriate Environmental Design, people must reside centrally and the dynamic, responsive & meaningful must eclipse the static, staid & stale. Ingenuity, creativity, imagination + open-mindedness prove valuable and vital.

Bibliography:
Eldonk, Jos van, and Helga Fassbinder, *Flexible Fixation: The Paradox of Dutch Housing Architecture*, Assen, Eindhoven University of Technology. 1990.

Habraken, N. John, T*he Structure of the Ordinary*, Cambridge, MIT Press. 1998.

Hertzberger, Herman, "Flexibiliteit en Polyvalentie", in Forum XVI 3 (1962), 115-121.

Hertzberger, Herman, *Space and Learning: Lessons in Architecture*, Rotterdam, 010 Publishers. 2008.

Kendall Stephen, Teicher Jonathan, *Residential Open Buildings*, London, Spon Press. 1999

Kendall, Stephen, *Open Building: Report on Study Trips to Japan and the Netherlands,* Technology and Economics, Silver Springs, MD. 1994.

Kurokawa, Kisho, *The Philosophy of Symbiosis From the Age of the Machine to the Age of Life*, New York, Edizioni Press, 2001

Matthews, Stanley, *From Agit-Prop to Free Space: The Architecture of Cedric Price*, London, Black Dog Publishing, 2007.

Price, Cedric, *Re:CP*. Edited by Hans Ulrich Obrist. Basel: Birkhauser. 2003.

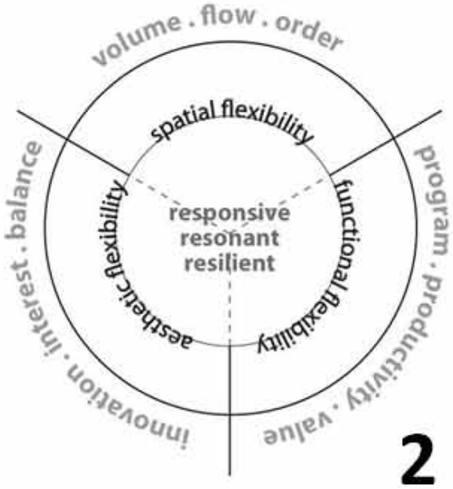
Sinclair, Brian R. "Culture, Context and the Pursuit of Sustainability: Contemplating Problems, Parameters and Possibilities in an Increasingly Complex World." Planning for Higher Education: The Journal of the Society for College and University Planning. Volume 38, Number 1, October-December. 2009.

Sinclair, Brian R. "A Synopsis of the Invited Inaugural Lecture in the 'Sustainable Lecture Series'. Responsible Urbanism Research Lab (RURL). Zayed University | Abu Dhabi, United Arab Emirates. October 2010.

Schneider, Tatjana and Till, Jeremy, *Flexible Housing*, Oxford, Elsevier Inc, 2007.

Legend
Fig. 1. Sinclair's Holistic Integrated Framework for Design + Planning
Fig. 2. Integrative Agility Framework
Fig. 3 - 5. sinclairstudio cultural project plus photographs of modern & traditional flexibility

1



2

3

4

5

Summary / Theme 6

Ulrike Altenmüller-Lewis
Drexel University ,PA, USA

Schools as Catalysts for the Urban Environment

Schools are not only a building type with a very high impact on shaping the minds of the generations to come; schools are also influential factors for the economic and social balance and welfare within a city or neighborhood. Often overlooked in urban planning as a potential asset to the infrastructural development, creating better school facilities can be a decisive factor for a healthy community.

Traditionally schools were exclusively the learning environments for the young, they also have the potential to become places for learning for all generations. While many cities and their educational institutions are on tight budgets, some further steps can be taken to transform these buildings into important anchors for their neighboring community. Integrating other stakeholders into the facility and/or allowing them to use school spaces, is one way to encourage this while allowing for higher investments into a better educational infrastructure that otherwise would have be cost-prohibitive. Schools that function as neighborhood centers can provide additional services to disadvantaged neighborhoods that can give economic impulses and spur development. This can be an important contribution to give a sense of place and identification to a community. The integration of learning and teaching with other neighborhood services can create public buildings that form the center of their community. A well-planned facility can ensure that each core function works uncompromised, while certain facilities can be shared.

Institutions with high impact

In many countries a strong focus on information processing and high-technology development has severely changed the demand and expectations for excellent schooling of future generations. Worldwide education is viewed upon as a major resource for the future and thus is of key importance and economical interest for every country. Despite its significance and many continuous promises and efforts for excellence in education, often the pace of change inside the actual classroom is lagging far behind the changes of the world outside and the spaces that can enhance learning and teaching are rarely adequately considered. Existing laws and policies often rather inhibit instead of promote their development.

While efforts are made continuously to maintain a competitive educational system and despite their potential for high community value, schools are usually projects of major social significance that have to make do with tightly calculated and sometimes insufficient budgets. Thus resources have to be used wisely and must be strategic as they are usually long-term. Any changes or improvements as well as the availability of additional funds can significantly influence the quality, appearance and functionality of school architecture. Some parameters can further help to support the role of a school as neighborhood anchor and there are architectural strategies that support teaching and learning processes within school as learning environment for the future.

Every school matters

Altogether close to 60 million pupils, pedagogues and educational staff spend large parts of their days in more than 120,000 school buildings across the USA. Many of these buildings are not in an appropriate condition to provide an inspiring and positive learning and work environment for their users. Too many are many of them are outdated in design and equipment, crowded, in desperate need of repair and slowly degrading. According to the National Center for Education Statistics, primary and secondary school enrolment will boast between 6 and 9 % until the year 2014. This will result in increased expenditure on the construction of new schoolhouses and raised costs for school renovation and maintenance. An annual construction volume of up to US$ 35 billion is expected. For many communities and school districts, a careful revisiting of their school construction policies along with their master plans for educational development is necessary in order to ensure that often limited resources are spend in a sustainable and most effective way.

In other countries educational environments have a larger impact and receive better consideration. As a highly industrialized country, the education of future generations is of surpassing importance to the Finnish people. Finland currently maintains one of the best and most efficient school systems on earth. The topic “School” is held dear not only theoretically but also practically in everyday life. This is manifested in usually exquisite locations of schools. The structures themselves are clearly recognizable as public buildings that function as centers of communication and knowledge for the entire community, not only serve as training-post for all children and work place for teachers. The contemporary Finnish school stands open to the neighborhood as a meeting place outside of teaching hours and gives identity to the area.

But schools as places for learning are not only purely functional buildings offering with their classrooms the infrastructure for the education of future generations. They are always also rather complicated expressions of social and educational policy aims of a nation and indicators for the position of the child within a given society. New schools reflect at best – influenced by contemporary trends in architecture – topical educational methods and point out by which concrete measures a suitable environment of learning can be shaped. By the structural condition of older schools and in through the condition of building services and technical equipment, conclusions can often be drawn not only as to the economic situation and efficiency of a municipality but also what meaning is attributed to education and learning in general.

The school and its context

The schoolhouse itself can be much more than a functional and well-designed institution that caters to the educational requirements of the future. Especially in socially critical school district and neighborhoods with low students achievements rethinking educational concepts is crucial. A school can offer meaning and purpose in innumerable ways. It can provide life and citizenship preparation. It offers the possibility for the development of social skills, job training and sometimes even have to function as emergency shelters. But there is also a raising demand for non-academic, recreational services. Students need a place to be and belong to before and after instruction times, where they can eat, play, study or socialize during pre-school and afternoon care in settings different from academic classroom environments. A school can and should be at the very center of community life. It can be an asset to the wider community and an important centerpiece of sustainable urban development strategies. A well-designed school can thus be a valuable resource to the whole community when access to the school’s infrastructure is provided after hours.

Unfortunately over the last decades in US-American schools boundaries between schools and their local communities have become increasingly rigid. In a notion to keep schools a save place, educational institutions, especially inner city schools, often have more and more resemblance with prisons for teachers and learners than with welcoming and inspiring learning places. It is time to reverse this development and rethink the potential of the institution for a wider audience. Opening schools to outside users and integrating community services, can maximize efficiency of financial investments. The infrastructure provided can be used for more hours and is available to a larger user group. This makes high-level equipment desirable that performs better while needing less maintenance. Schools for the future will provide a progressively more complex selection of social, recreational, sportive and artistic services to the wider neighborhoods, as mayors and other municipal leaders try to bundle educational and community. As the organization of circulation and a clear hierarchy of spaces is fundamental to allow for multiple users, an early decision – if possible before the design process is started – on additional functions and integration of other users is necessary. Common areas, workshops, sports, arts and science facilities can be made available for outside users. Schools can become defined public locations and anchors within their neighborhood, welcoming children and adults equally from the whole community.

There is also a raising demand for non-academic, recreational services. Students need a place to be and belong to before and after instruction times, where they can eat, play, study or socialize in pre-school and afternoon care in settings different from classroom environments. Health care facilities or public libraries are readily accessible if they are located within the school building and add important additional instruction to the syllabus.

Learning from Precedents

Some architectural principles have an especially high impact on new Finnish school buildings. These are functional, spatial and design concepts that were examined closely and have been documented in this study. The spatial formation of the over all structure determines the relationship between the building and its parts. The organization of circulation within the building and the use of specific zones are two parameters closely interrelated. The use of materials and transparency enhances or alters the functionality and spatial interrelations between the parts of a building and within certain areas, especially within classroom clusters and different areas of operation.

The architects Jeskanen-Repo-Teränne and Leena Yli-Lonttinen designed the winning entry of Aurinkolahti School in Helsinki (Figure 1) for an open architectural competition. The competition invited designs that would create a learning environment that would stimulate pupils to study actively and in a self-directed way, either independently or in groups. The solution is an atmosphere that fosters interaction within groups as well as with the environment.

The Location for the School

What has become popular in Finland is to locate the schoolhouse next to parks and public sports facilities that students can use. School grounds can also double as recreational centers for the neighborhood. This is economically sensible for many communities as the augmented utilization and full capacity use of schools, their facilities and equipment makes high-quality investments more reasonable. To facilitate this augmented use, many Finnish schoolhouses are subdivided into smaller building wings or units that are grouped around extensive communal facilities. Together with an adjacent library, stage, auditorium and cafeteria these often form the communicative center of the building and the multifunctional heart of the school. This open space links the various parts of the institution together while generating spatial generosity.

Access and Circulation

All building parts are reachable via decentralized circulation, creating a secure and easily managed access. This system allows the opening of specific parts of the school to external users after school hours or over weekends. Furthermore, as a result of this system, circulation areas are less often frequented. The whole building remains more tranquil during its use and circulation areas can operate as common or additional learning space. Thus usable area is increased while auxiliary footage is reduced. Clever building arrangements create functional extensions or multiple uses without significantly increasing construction costs. Transparency and a high degree of spatial-visual communication generate a secure environment.

Figure 1. Aurinkolahti School – Spatial Analysis (Will be included in final paper)

Changes inside and outside of the classroom

While schools reconsider opening up to communities, at the same time classroom situations change. Instruction by a teacher through frontal lessons is only one of many options to gain knowledge today. The skills needed by the next generation have changed. The best instruction today is considered student centered, implementing a variety of teaching styles and catering to many different learning preferences. Instead of lectures in a variety of topics, pupils tend to increase their knowledge through project-based learning. They work alone, in pairs or in teams inside and outside the classroom. The teacher has evolved from an instructor who passes on his knowledge into a supervisor of individual learning advancement. At the same time technology increases the pupils’ potential and need to learn anytime and anywhere – and not only in a classroom. Life outside the school becomes a progressively more complex field of exploration for students that is and should be an integral part of their learning world. At the same time frustration with restrictions and limitations through the public educational system create alternative teaching environments that support a variety of learning styles, call for a very active engagement and student participation and consider non-traditional options for school facilities and classrooms. Strategies to include real life experiences into the school world and to create alternative learning event need to be initiate.

A different kind of learning experience

As public school systems often do not leave sufficient room to operate according to specific pedagogic missions and goals outside of mainstream education, alternative school concepts have developed. These might base upon recognized pedagogical ideas like the concepts of Maria Montessori, Rudolph Steiner or others or on other concepts, which operate mostly autonomously parallel to the public school system. These schools offer increased opportunities for learning while at the same time offering access to quality education for all students, disregards their financial background. The advantage of these schools is that they encourage innovative teaching practices and also create teaching opportunities for professional. They do encourage community and parent involvement and offer an alternative educational path, usually with a focus related to a special subject field. Usually maintaining high academic standards with smaller class and school sizes, innovative approaches and educational philosophies, these schools allow for innovative learning approaches. Some of them work on budget-challenging projects that challenge the ingenuity and capability of instructors and students to make places and designs of quality out of very little.

The impact of space

Most of our time, in total around 20 hours a day, we spent inside of buildings. The spaces in which we live or work, wake or sleep, shape our behavior, interaction and communication. They can provoke or inhibit activity and influence our well being as much as our performance. The impact of the built environment on us is enormous and to a large degree we subconsciously react to our surrounding. As adults we have some control about our environment, which to some extend we can alter, adjust or improve to make them more suitable for our personal needs. Children most of the time have by far less influence to shape the surroundings in which they spend their days. They have to rely on the spaces provided for them. Yet they might be the ones that could suffer or benefit the most of adequate and well-designed school buildings and educational facilities.

The third teacher

Still today, many educational buildings are problematic in the sense that there is too little School Architecture (sic!). A Swedish proverb states that there are three “teachers” involved in school education. The first teacher is the group of fellow students. The second teacher is the actual instructor. And the third teacher is the space where learning takes place. The learning environment might support and enhance the conquest of new knowledge, understanding and experiences. It also influences social behavior and interaction. Unfortunately in many school buildings in operation we still look in vain for this third teacher and the space for learning does not yet receive the appropriate attention.

Single parameters determining the quality of school buildings have been well-researched i.e. adequate classroom sizes, access to daylight, impact of high noise levels and bad air quality. These findings often prepare the basis for new codes or requirements and thus receive practical implementation. School authorities like to act proactive, especially when they can react to hard, measurable facts. However, attention only very slowly turns to the soft factors of the spatial qualities of schoolhouses. The influence of space on us has been known for a long time, or as Sir Winston Churchill put it: “We give shape to our buildings, and they, in turn shape us.” This awareness is especially important when it comes to spaces for pedagogy, in which communication and interaction unfurl especially intensively. How schoolhouses affect student performance and the well being of their users and how they might act as catalyst for the neighboring communities are facts difficult to measure and determine objectively in a scientific manner. If we look at the vast majority of school buildings in use today and many of the educational facilities under construction we still miss adequate spatial quality that goes beyond providing (at its best) functional spaces.
Worldwide there is research done identifying trends in learning and teaching and how they could and should affect school de

Ulrike Altenmüller-Lewis
Drexel University ,PA, USA

sign. These manifest i.e. that it is favorable if a school has an exquisite and central location with easy access by the students. Clearly recognizable as a public building that functions as center of communication and knowledge for the whole community, the educational environment does not only serve as training post for kids and work place for teachers. It stands open to the whole neighborhood as a meeting place outside of teaching hours and gives identity for the whole area.

The design of many of the best contemporary educational buildings is often transparent and flexible. The schoolhouse is thus easily adaptable for future demands and changes. For this purpose architectural diversity is combined with a high degree of functionality, while taking local conditions and needs into consideration. An early on dialogue between local authorities, pedagogues and architects initiate spatial concepts, that encourage and support the acquisition of social competencies, the capacity for teamwork and cooperation. Formative for the functional, spatial and design concepts are especially the spatial formation of the over all structure, the organization of circulation within the building, the use of specific areas and zones and the use of materials and transparency to enhance or alter functionality and spatial interrelations between the parts of a building and within certain areas, especially within classroom clusters and different areas of operation. These key parameters were examined closely and have been documented in the study at hand.

By surrendering detailed binding specifications through regulatory authorities and a great openness for experiments a highly individualized planning process for schools is possible. The local authorities are instrumental in this process, which they initiate, facilitate and for which they ultimately account for. They influence the resulting functional, special and design concepts by proposing the respectively aspired pedagogical goals. From early on in the planning process it is looked after that the architecture supports the intended purpose of the building – learning and teaching – as optimal as possible.

Though the concrete influence of the architecture on the learning outcome cannot be objectively measured, still it can be assessed that a combination of recurring functional, spatial and design concepts apparently have a profoundly positive effect on the learning environment. Agreeable, aesthetically adequate and highly functional spaces for learning can have a positive impact on the behavior and performance of the students and the well-being of all users. An intensive dialogue between pedagogues and architects facilitated by the funding authorities can help to develop new spatial strategies for adequate and future oriented learning environments.

The appreciation of education is also mirrored in the architecture of school buildings and the design and equipment of learning environments. The investment into the education of the population especially into the education of our children is a profitable and rewarding investment into the future of a society. Only with a deep interest and devotion to education, openness for experiments and the necessary willingness to adjust our education system to ever shifting challenges, a school system remains efficient, competitive and successful.

Notes

[1] U.S. Department of Education, National Center for Education Statistics (NCES), Washington, DC. Common Core of Data, Numbers and Types of Public Elementary and Secondary Schools, in «The Common Core of Data: School Year 2005-06», NCES, Washington DC, 2007.
[2] U.S. Department of Education, National Center for Education Statistics (NCES), Washington, DC Characteristics of Private Schools in the United States: Results from the 2005-2006 Private School Universe Survey, NCES, Washington, DC 2008. p. 7.
[3] Hussar W.J., Bailey T.M., Projections of Education Statistics to 2016, (NCES 2008-060). U.S. Department of Education, National Center for Education Statistics, Washington, DC; December 2007.
[4] McGraw-Hill Construction Data. March, 2008 http://www.edfacilities.org/cd/McGraw-Hill-Construction-Data.pdf [Status 09/22/2008].
[5] For more information on Finnish educational Buildings please see also Altenmüller, Ulrike, Koulu—Schule auf Finnisch. Funktions- Raum- und Gestaltungskonzepte für neue Schulen in Finnland. Dissertation, Bauhaus-Universität Weimar, 2008
[7] One example is the work that is done in design studios of Charter schools like the Charter High School for Architecture and Design CHAD in Philadelphia. See also http://www.chadphila.org
[8] In other fields than educational architecture there has been substantial research on similar topics. The BOSTI Study (Buffalo Organization for Social and Technological Innovation, 1984), was a long term study with more than 10,000 participants undertaken in 100 US based firms. The study measured and evaluated the influence of the build office environment on productivity and performance as well as on wellbeing and the quality on working life. As a result, the findings were increasingly considered in office architecture. Comparative long-term studies with solid scientific background specifically on the connection between the space and learning outcome does not exist. Thus the assumable influence of the built environment on student performance usually receives very little attention.

Bibliography

Brubaker C.W., Bordwell, R., Christopher G., Planning and designing schools. McGraw-Hill, New York, N.Y., 1998.

Blank M.J. , Melaville A., Shah B.P., Making the difference: Research and practice in community schools. Institute for Educational Leadership, Coalition for Community Schools, Washington, D.C., 2003.

Bingler S., Building the Community Nexus. In: «Educational Facility Planner», Volume 4, n. 3, pp. 35-37, 2011

Bingler S., Quinn L., Sullivan K., Schools as Centers of Community: A Citizen's Guide For Planning and Design. National Clearinghouse for Educational Facilities, Washington, D.C., 2003.

Carey K.D., School District Master Planning: A Practical Guide to Demographics and Facilities Planning. Rowman & Littlefield Education, Lanham, MD, 2011

Canizares, Ana and Fajardo, Julio (Editors). Kindergartens, Schools and Playgrounds. Loft, Barcelona, 2007.

Dudek, Mark. Schools and Kindergrartens. A Design Manual. Birkhäuser, Basel, 2008

Lackney J.A., Assessing school facilities for learning/assessing the impact of the physical environment on the educational process. Educational Design Institute at Mississippi State University. Mississippi State, MS,1999.

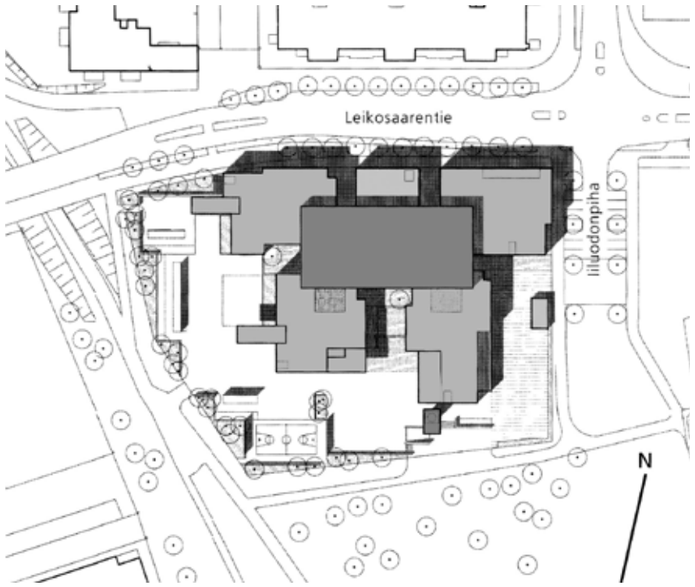
Gelfand, Lisa. Sustainable School Architecture. Wiley, Hoboken, NJ, 2010.

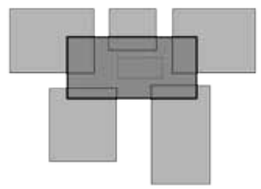
Leibowitz Earley, Sandra. Ecological Desing and Building Schools. New Village Press, Oakland, CA, 2005.

Lippmann, Peter C. Evidence-Based Design of Elementary and Secondary Schools. Wiley, Hoboken, NJ, 2010.

McKoy D., Vincent J., Bierbaum A., Opportunities: Seven Steps to Align High-Quality Education with Innovations in City and Metropolitan Planning and Development. University of California, Center for Cities and Schools, Berkeley, 2011.

Medvec J., Master Planning in Developing Communities. In: «College Planning and Management». Volume 14 n. 1, pp. 96-97, Jan 2011





Structural Analysis - Volume, Form and Order

Analysis of Spatial Sequence - Space and Passages

Analysis of Use - Space and Function

Analysis of Spatial-Visual Communication

Anna Arioli
Politecnico di Milano, Italy

Stand-By Landscapes - Designing residual spaces for urban regeneration

"Small Green Ring" landscape promenade: an experimental Case Study on Milano Navigli areas

The "between" centers its interest on what mediates - architecture of relation and tangency.
Urbanism of open systems, architecture without limits, architecture of conjunction of the minimum and the without interest. The "between" is a space permanently on the run; it originates were conditions are ambiguous, confused, misapplied, hybrid, uncertain .

"Stand-by landscapes": working on the space between
The "residual" is the place of contact between further urban expansions, enclosed empty space to be preserved and an opportunity to create new relations in the collapsed territory. There is no more available space to build again, it is necessary to work "in between", to recover and re-generate what has remained: post-industrial areas, abandoned infrastructures, sub-urban country. These are all residues where references are absent and weak, unsustainable holes with no relations and quality.
The research and the study case we propose, tries to make a change of direction: starting from a careful reading and interpretation of these "dispersion landscapes", it elaborates some original hypotheses to open those selected urban areas ("residual landscapes") to re-qualification dynamics.
Residual spaces are always changing areas, places with no fixed forms, structurally unstable, uncertain. They are "stand-by landscapes", wich gives the idea of waiting and precious opening to identity integration, but also suggests potencial movement and change. Thanks to this availablility non-lieux become "strategic landscapes", testing design fields and units from which regeneration starts.
As the neighbourhood has been the research site for urban project during the XIX century, "void" - always full of latent signs, mixied uses and memories - becomes the crucial occasion for the design of contemporary public space, open to the scale of landscape.
Shapeless voids, if well designed in their internal tissue and put in relation one to the other, become dynamic systems for the redevelopment of critical contexts, fertile terrain with materials and traces for the re-construction of the future landscape.

Residual as "Sedime Fertile: strategic material for urban regeneration
Starting from the nuances in the words void, terrain vague , discontinuity, diastema, accompanied by some meanings of musical terminology (range, pause, suspension), the idea of "residue" is introduced as a place to be preserved and to be employed to develop new strategies for the landscape and the city margin, rather then as a deteriorated and unused space.
Referring to the key binomial of "Fertile Terrain" this "empty" space is open to the constructive meaning of regeneration center for the territory and human life: a context of margin becomes an overwritten palimpsest of traces and presences, hosting regenerative dynamics.
The gap between urban and non-urban uses, seen on the current territorial maps - a spread unicum which lost the traditional distinction between citiy, suburbs, countryside - can be considered as a benefit, not only as a disease to be healed.
The residual is looked differently and re-read as the privileged space, able to host the project transformation (internal urban qualities) and to multiply its benefits on the entire landscape (external re-qualification dynamics).

The definition of "Fertile Terrain" carries a strong suggestion: on one hand the idea of a certain staticity, on the other hand a deep sense of creativity, productivity which generates life. Fertility implies an effort towards a new stadium, the creation of something still not existing and yet overcoming what was there before. The act of sedimentation requires a slow time, during which the soil prepares for regeneration, defining a long process that began long time which comes to maturation in an instant. To preserve, manage, recycle and rethink the residual spaces of the city does not simply reorder them into the urban tissue, providing them with customs and efficient services. The void itself, specifically selected, must be saved and re-designed from the interior, with all its marks and characters .

The residue, selected subset of the many generic "gaps" that remain in the urban sprawl, becomes a strategic space, just because reinterpreted as fertile node, operable by architectural and landscape project. Only through a shift from a general study to particular approach on the residual area, it is possible to understand the first interpretative framework, to define the main goals of the transformation, turning it operable and open to requalification, which is necessarily linked to the real working context.

From generic to specific: experimental design Case Study "Small Green Ring" _ cultural and landscape promenade along Milano Navigli residual areas
We present a significant case study as an application of the research hypothesis: "Small green ring" is a design proposal for the city of Milan "Cerchia dei Navigli" area, which relates concepts and actions find out during the investigation development.
The project constructs the contemporary public space (urban + rural) through architecture and landscape materials, starting from reusing residual voids and interstices. It is a "pre-figuration" for a smart and qualify (sustainable and beautiful) future city.
The strategy creates an internal Green Ring, slow practicable belt that connects residual spaces along the considered area and qualifies existing cultural references and the surrounding environment. This regenerated network is made by cycle and pedestrian paths and strategic nodes (privileged public spaces), obtained from critical areas available for transformation (open or closed, such as wastes, hidden gardens, abandoned corners).

The environment and the green thematic in Italy has always been a very controversial subject, difficult to be reviewed; there have been several thoughts and ideas over the years, with creation of different urban images and ideas - in particular for the city of Milan. It is now more than ever urgent to think that all the green areas and public spaces, from the small parking to playground areas, should have a high landscape quality (formal balance, materials and natural components care). They should be strongly connected by soft trails, possibly under trees, at any levels in a continuous exchange (in/out, nature/culture) that will improve urban life quality.
For centuries Navigli represented a real landmark for Milan: a monumental and cultural extraordinary heritage, which led to define Milano as "City of Water". The ring of canals - a total of about 5,5 km - was covered in 1929 and definitively buried around the sixties of last century, due to stability problems.
Even though all these drastic interventions, the urban landscape emerging along the entire "Cerchia" is still perfectly readable and constitutes one of the most characteristic area of Milan. There are still evident signs of water presence within the city, looking at some gardens facing the streets (via Visconti di Modrone or Senato), observing the medieval Porta Ticinese or the.old "sciostre" shapes (Molino delle Armi).
The strategic proposal is to create a slow journey belt, capable to connect all the spaces that follow along Cerchia dei Navigli and to allow the direct use of a cultural and environmental qualified system. The network of walking and biking trails will focus on some strategic points, crucial and resting preferred points, which can be identified on existing sites to be redeveloped, both open (residual public spaces, including gardens, etc), and closed (disused buildingd, available public or private properties).
Ten traits of interest (within there are about 29,000 sqm of green) are identified nearby the Navigli Cerchia and connected to create a network, a circular ring developed around the center of Milan and radially connected with the territory outside, along the researched slow promenade.
Path lines and excellence nodes are integrated on available areas to redevelope (wastes, corners, residues), in a precise but flexible "dual system", made between nature and culture: the green ring (open space and pedestrian trails) is woven with red knots (meeting points or places with an historical importance).
It is an over time creation (steps strategy) of a slow and high quality network, along which people can find cultural interest items (museums, schools, services), potential nodes for reuse and enhancement of the social system, starting from urban and landscape design. The general aim is to develop a series of avant-guarde public spaces, through a "natural" network (water and vegetation integrated lines), starting from minimal but precious openings and marginal areas within the city (wastes within consolidated tissue), in order to guarantee urban permeability and a more liveable future.

Widespread valorisation of existing residual space (deteriorated or abandoned, small, isolated)
During the XIX century large avenues with trees were the main urban passages, places of everyday life and meeting, spaces of strategic importance for the city itself. Since the year 2000 the detailed work on small residual and waste areas - micro open spaces trapped in the dense urban fabric - has been delegated to ordinary municipals, while planners have been dealing with larger scale transformations of European capitals: Grand Paris, Greater London, Milano Verde.
Open spaces and green typologies should be modified and updated, enhanced by a meticulous reconnaissance and analysis; it is necessary to highlight new shapes and potentials of abandoned green spaces, disused corners, finding out deep and crucial features for the project conversion.These open spaces in Milan represent nearly 22 square meters per inhabitant, together with rural areas around. Urban gardens, almost absent until a few years ago and until the Expo debate did not stress their role, are now becoming important and continue to spring up spontaneously in the town.
Out of several interesting proposals, only a few will be mentioned here such as the "Orto della Fede" (Faith Garden) in the Protestant Church Garden, born from the desire of an association of urban Horticulture in the heart of the city, or the "Boschetti del Benvenuto" (Welcoming Woods), small woods at the main urban entrances, at the centre of confused roundabouts, or inside residual spaces: should they simply be defined as urban forestations, or do they represent new urban landscapes?

Multi-scalar strategy and opening to the territory: synergy with Navigli circuit and the landscape
There is much to ask about how to manage tensions and potentials that exist between the edge and the centre (not only physical but also cultural, political, dynamic centre). There is a complex relation between urban context and landscape (case of Milan), between the considered residue and the whole territory surrounding it. We operate within open spaces, fragments and built suburbs, hybrid presence of concrete and nature, speed and slowness, private and public: this is a continue exchange from minimum to extra-large, from close to open and vice-versa. Critic and multilayered spaces turn to potential, if we look on reverse: from the landscape to the inner city, from outside to inside.
The proposed cultural and landscape circuit will be able to export the 'Culture' from the centre to the outside, channeling and importing 'Nature' from the periphery inside the city, creating new socializing places in a continuous exchange between interior and exterior, between the urban old city scale and the scale of its metropolitan landscape, until the green belt around (existing or desired): Green Ring, Metrobosco, Raggi Verdi e Ingranaggi, up to agricultural peri-urban areas.
Many alternative routes will start from the Green Ring, either inward (urban culture) than outwards (external boroughs and parks); these mobility lines will intercept the whole over-municipal green system and activate a cultural development process, which "contaminates" the entire landscape from here (multiplication points). Navigli "Small Green Ring" links up the "Green Rays" system, a consolidated strategy for Milan, which export Culture from the centre to the territory, importing Nature from the countryside to the city, such as an osmotic in and out exchange. The strategic approach is implemented by sustainable mobility and smart technologies, in order to create a model for residual space reuse and re-qualification design, which can be replied in time, exported and multiplied elsewhere, linked in an international network.

"Nature is Culture" Paths of flexible integration between Nature and Culture
Culture and nature innervates the city and gives permeability between built and empty elements. This design approach exports Culture from the center outwards and imports Nature in the city, in continuous exchange between historical and agricultural landscape.
The system of nature becomes the supporting structure for the system of culture, both because it carries the same information and fundamental values (Nature is Culture), and also because it is physical path - "green grid" - able to relate all cultural emergencies (water infrastructures such as the Leonardo's Chiuse, public meeting spaces, monuments and churches, citizens' services).
Connections can be either physical (smart infrastructures as pedestrian paths, green systems, parks, recognition points) and virtual (computer systems for the information exchange, initiatives dissemination, interactive blogs, analysis of the activated processes and their impact on the area).
Lot of cultural emergencies and considerable interest points will be easily identified, walking or cycling along the re-designed ring, such as University of Milan, Biblioteca Sormani and the historical Villas, all the art Galleries and theatres, the Sforzesco Castle or the Historical Archive, together with Leonardo's works and projects (just to name the best known).

Water Milan _ Green Milan: water lines and agricultural system "on stage"
Voids turn out to be strategic and form the backbone of critical areas, together with existent connections (paths, waters, streets, technologies). We'll outline an action-key kit, i.e. instruments to create qualify collective spaces against the temptation to fill urban leavings. Critical gaps will become concentration of landscape and regenerative network for the whole territory.
This is not an invasive proposal. Re-opening water systems and related watering channels – as recently proposed- is not under evaluation; the process will rather take place through minimal and targeted actions, like a "landscape and cultural acupuncture" aimed to re-qualify designed spaces. A green system will be studied, able to accompany and structure the entire ring and its branches ("rays"): tree rows with a strong perceptive impact, island of green with different chromatisms, identifiable stop areas, essences with beneficial properties (therapeutic, relaxing, ornamental), didactic micro-gardens, play and rest areas, information points in culturally relevant knots, etc. The connection from center to outside is gradually re-thought: countryside and surrounding parks will be reachable along the very lines of this re-qualified water network, moving on the radial tracks directed in the landscape - real public space of contemporary.
Existing open space (natural or urbanized) is selected, re-qualified and thematically characterised, put in relationship through surgical actions, targeted to the specific places under examination. Neighbourhood gardens and openings will be connected to hardly accessible residual spaces; these will be included will benefit from the development of ad hoc projects along the years. Relevant private green areas will also be identified as green lungs and precious places, significant part of the net although not accessible.
True protagonist of the intervention area is the texture of furrows and watering channels, which designed the countryside for centuries and remains physically present in Milan historical center: it is "put on stage" and valorised through a slow process, which detects its stratification of signs, identities and uses of the soil. Agriculture is a key part of Lombard cultural system and characterizes its landscape. The current project aims to reintroduce its signs and uses inside the urban tissue, through green presences (urban gardens, tree rows and water signs), physically witnessing rural rhythm and nature also in the historical center. This assumes a strategic meaning when considered within the context of the upcoming Expo 2015 appointment "feeding the planet, energy for life": it is an attempt to recover the wisdom of an agriculture which in the past has been able to preserve and structure, in one of the richest land in Europe, a highly refined architecture of channels and furrows, efficient and of enormous landscape quality.

Which is the future of residual spaces and urban voids? Towards a new idea of the city
Every land is unique, therefore it is necessary to "recycle", to scratch once more (possibly with the greatest care) the old text, which men wrote on the irreplaceable matter of soil, in order to lay down a new one responding to the needs of today, before it is in turn abrogated .

The forward-looking vision of the project reflects on available "voids" to be recovered, verifies their specific tracts and tries a process of reuse, reinterpretation, recycle and valorization of those. A targeted and precise valorization design of the chosen collective spaces is based upon the constant idea of recovering - the so called "virtuous circle of 8R" , as a shared working strategy.
The key operation, preliminary to any kind of design intervention, is recovering. Reuse, repair, identification of specificities, reinterpretation, fine workmanship: these words are all useful to describe the approach. To recover is a repeating operation, implying a sense of temporality (from the past, towards the future). Nowadays it is fundamental to retrieve and reinterpret existing materials essentials for the project: observation, reuse, precision and specificity are the first answers to a concrete and substantial - aesthetics and ethic - need of architecture.
A step forward is taken when multiple and overlapping utilities

are obtained in the same place. A simple example is to hybridize architecture and road infrastructures by consolidating and enlarging obsolete road systems, which might host commercial structures; or to create parks and public gardens in dismissed industrial areas. Meaningful experiences are that of "Repairing Cities" in Cairo reported by Marco Navarra and the High Line in New York by Diller & Scofidio, together with the similar Promenade Plantée in Paris, where the parts above or below urban viaducts become the space of spontaneous living, spare time, culture.
Within this new vision of interstitial spaces, minor and dismissed but recovered by the urban design and networked in a real sustainable and perceivable system, the prediction to proceed gradually (step by step) becomes relevant. This implies a strong communication component, made possible and smart both through the use of technologies and the activation of a network of actors - associations, universities, privates. Thanks to this, a constant amelioration of the interlaced actions is ensured and finally aimed to favor the "three sustainabilities" of the project :
- a sustainable management of the environment, translating into a rationalization of the mobility system and the promotion of alternative fruition models (environmental sustainability);
- a valorization of the nodes as occasions for meeting and interaction, through the design of beautiful collective spaces and integration of pleasure and cultural areas (aesthetical and cultural sustainability);
- a diffusion of the knowledge of the ongoing transformations and a careful study of their feasibility, with strong interactive communication at all levels (economical and social sustainability).

5. Bibliography

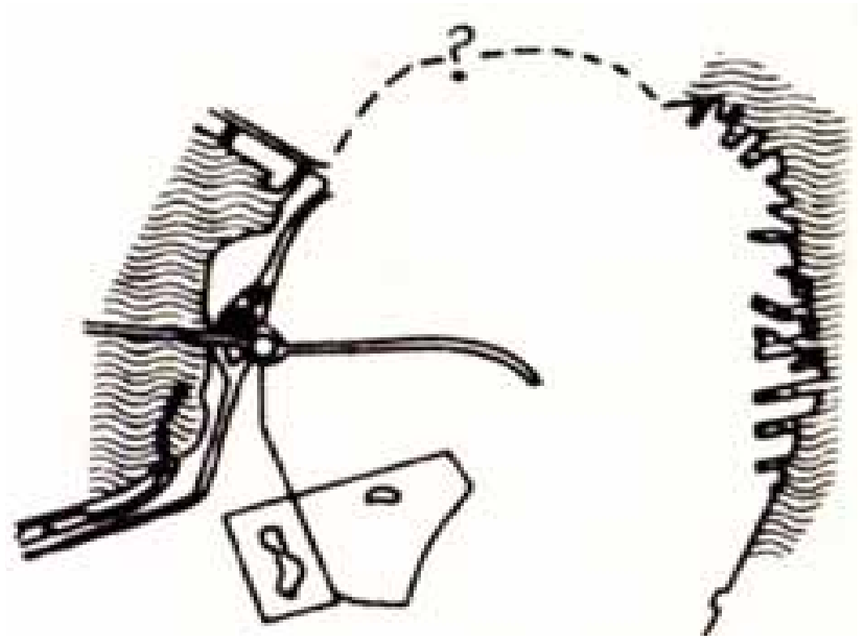
AA. VV., Dictionary of Advanced Architecture: City, Technology and Society in the Information Age, Actar, Barcellona, 2003.
AA. VV., Mouvance II. Soixante-dix mots pour le paysage, Editions de La Villette, Paris, 2006.
Abalos I., Herreros J., Natural Artificial, Exit LMI, Madrid, 1999.
Ateliér Le Balto, Archipel. L'arte di fare i giardini, Bollati Boringhieri, Torino, 2008.
Augé M., Tra i confini, città, luoghi, integrazioni, ed. Bruno Mondadori, Milano, 2007.
Bourriaud N., Postproduction, postmedia books, Milano, 2004.
Berrizbeitia A., Pollak L., Inside Outside. Between Architecture and Landscape, Rockport Publishers, Minneapolis, 1999.
Boeri S., Lanzani A., Marini E., Il territorio che cambia. Ambienti, paesaggi e immagini della regione milanese, A.I.M., Abitare Segesta, Milano, 1993.
Corboz A., Ordine sparso. Saggi sull'arte, il metodo, la città e il territorio, Franco Angeli, Milano, 1998.
Calvino I., Lezioni americane, Oscar Mondadori, Milano, 2000.
Clément G., Manifesto del Terzo paesaggio, Quodlibet, Macerata, 2005.
De Solà-Morales I.,Terrain vague, in Quaderns d'arquitectura i urbanisme n. 212, Barcelona, 2002.
De Solá-Morales M., Progettare città, Quaderni di Lotus n.105, Electa, Milano, 1999.
Desvigne M., Eliminare ogni forma di Terrain Vague, Giornale dell'Architettura n. 10, 2003.
Donadieu P., Campagne Urbane. Una nuova proposta di paesaggio della città, Donzelli, Roma, 2006.
Dorfles G., L'intervallo perduto, Skira, Milano, 2006.
Gregotti V., Il territorio dell'architettura, 1993, ed. Feltrinelli, Milano. 2008.
Heidegger M., Corpo e Spazio. Osservazioni su arte - scultura - spazio, il Melangolo, Genova, 2000.
Kipar A., Architetture del Paesaggio, Il Verde Editoriale, Milano, 2003.
Lanzani A., I paesaggi italiani, ed. Meltemi, Roma, 2003.
Latouche S., Breve trattato sulla decrescita serena, Bollati Boringhieri, Torino, 2008.
Marini S., Nuove terre. Architetture e paesaggi dello scarto, Quodlibet, Macerata, 2010.
Marot S., L'alternative du Paysage, Le Visiteur 1, Société des Architectes, Paris, 1995.
Monestiroli A. (a cura di), Il centro altrove, periferie e nuove centralità nelle aree metropolitane, catalogo di mostra presso la Triennale di Milano, 1995.
Navarra M., Repairingcities. La riparazione come strategia di sopravvivenza, LetteraVentidue, Siracusa, 2008.
Nicolin P., Repishti F., Dizionario dei nuovi paesaggisti, Skira, Milano, 2003.
Smithson A. & P., The Charged Void: Architecture, The Monacelli Press, New York, 2001.
Schönberg A., Manuale di Armonia, 1911, ed. it. a cura di L. Rognoni, Net, Milano, 2002.
Corboz A., Avete detto spazio?, in Il disegno degli spazi aperti, "Casabella", n.597/598, 1993.
Gregotti V., Progetto di paesaggio e F. Purini, Un paese senza paesaggio, in "Casabella", n. 575-576, 1991.
Molinari L., Aiuto! Help!, in "Abitare", n. 455, Milano, 2005.
Pollack L., The Landscape for Urban Reclamation, in Reclaiming Terrain, "Lotus International", n. 128, 2006.
Secchi B., Un problema urbano: l'occasione dei vuoti, in "Casabella", n. 503, 1984.
AA. VV., Geometria e Natura, Atti del Convegno ANCSA, Associazione nazionale centri storico-artistici (ITA), Bergamo, 2007.
AA. VV., Forme del movimento, "Casabella", n. 739-740, 2005-2006.
AA. VV., Il disegno del paesaggio italiano, in "Casabella", n.575-576, 1991.
AA. VV., L'espansione dell'arte, "Lotus Navigator", n. 6, 2002.
AA. VV., Urban concepts, in "Topos", n. 47, 2004.

6. Notes

[1] Manuel Gausa, In Between, in AA. VV., The metapolis dictionary of advanced architecture. City, Technology and Society in the Information Age, Actar, Barcellona 2003.
[2] I. de Solà Morales, Terrain vague,e, in Quaderns d'arquitectura i urbanisme n. 212, Barcelona 2002.
[3] A. Arioli, Stand-by Landscapes, from shapeless void to fertile terrain. Designing residual space for a re-qualification of edge-contexts, phd research, Milano 2012.
[4] Si legga a tale proposito G. Dorfles, L'intervallo perduto, Skira 2006.
[5] The project was made by the author together with the architect Andreas Kipar for the Green City Italia Association, during a recent design competition (2011).
[6] This circuit is defined "small" in comparison with to the external one, coinciding with the outer "tangenziale", its parks and empty sub-urban spaces.
[7] "Raggi Verdi" is a design strategy for Milan, developed by A. Kipar with the Land group since 2005. It develops the construction of a new urban idea, through the physical dimension of public space, no longer as isolated fragments, but put into a bigger dynamic system.
[8] A. Corboz, Il territorio come palinsest
[9] A. Corboz, Il territorio come palinsesto, in Id., Ordine Sparso. Saggi sull'arte, il metodo, la città e il territorio, P. Viganò (a cura di), Franco Angeli editore, Milano 1998.
[10] S. Latouche, Breve trattato sulla decrescita serena, Bollati Boringhieri, Torino 2008.
[11] R. Spagnolo, L'architettura e la sostenibilità, testo introduttivo alla dispensa di¬dattica per il Laboratorio di Progettazione Architettonica, II anno laurea specialistica, Politecnico di Milano, a.a. 2008-2009

7. Legenda

1_Lynch_Kevin.jpg
Kevin Lynch, Confini variabili dei quartieri di Boston, schizzo tratto da The Image of the City, 1964.
2_Clement_Gilles.jpg
Gilles Clément, schizzo rielaborato dal Manifesto del Terzo Paesaggio: from residues to dynamical systems for the contemporary city regeneration.
3_ Guallart Muller Ruiz Geli.jpg
V. Guallart, W. Muller, E. Ruiz Geli, Scape House, Territorial sprawl, around the concept of "naturartificial", 1998.
4_Green City Italia.jpg
Design territorial strategy materials: between culture and nature.
5_Small green Ring.jpg
Small green Ring strategic area of the intervention, along Cerchia dei Navigli area.
6_ Kipar Andreas.jpg
Andreas Kipar with studio Land, Raggi Verdi and Ingranaggi strategy for Milano future landscape.
7_Green City Italia vision.jpg
Residues "on stage", new scenarios for re-used and re-qualified public spaces.
8_Diller & Scofidio.jpg
Design through reuse and reinterpretation, Diller & Scofidio + Renfro, The High Line, New York 2005.



Giuseppe Barbieri - Alberto Ulisse
Universita' degli Studi "G.d'Annunzio" Chieti e Pescara, Italy

Territories of energy and urban shape

The thematic field

How to connect the energetic planning of territories -in the progressive dimension of urban sprawl- to their configuration?
A better quality of urban and territory plans involves a radical revision of the usual way of energetically conceiving territory.
The experimentations gathered so far show the possibility of interpreting the energy planning of territory as one of the ways of expressing the different configurative and productive potential represented by local identities.
The different natural and artificial components mobilize with uncommon aesthetic values, generating a new landscape of sustainability and energy.
The energy question becomes one of the holistic keys to the reading of urban landscapes; the "energetic cultivation of territory" – including rivers, lakes and sea – produces new opportunities and risks. It is necessary to integrate the sectorial approach of economical-technological origins with the wider look of architecture linking through different scales, "ecological quality" and "configurative quality".
The spaces of mobility – in particular – form a fundamental heritage for the applications of productive systems of renewable energy.
The territories of infrastructure can be changed into hybrid places where new ways of energy production can be supplied. They are new families of territory patterns capable of conjugating the "out of scale" of infrastructure to landscape: from the thickening of infrastructural edges, with screenings and "active" acoustic barriers, to the use of horizontal wind-power as a bridge to the various possible devices hidden in the flowing surfaces.
Therefore the task is to study the relationship between new energy devices and different configurative arrangements, grasping the possibilities of relationships, even original ones, between nature and artifice in the design of transformation landscapes, through the acknowledgement of formal qualities and the functioning of a "background" that becomes "figure".
What happens is the overcoming of a potentially polycentric conception – a bright multiplication of focuses – in favour of the possible exploration of a different relational quality of the geographic space as a multi-material integration between empty and full, between nets and centrality, surfaces and lines.
An investigation carried out by means of a critical analysis of what exists in order to describe and highlight opportunities and criticism, recurrences and especially precious differences.
The land itself in its shapes and layering, in its complex functioning – not only as a surface to support modifications – must be interpreted as the main and "great" architecture.
A geo-city using nature as an "active" material of contemporary city in its quality of "internal" rather than external and motionless background to the contemporary organization of urban territories.

Strategies

T1 – Connecting the possible widespread and cellular organization of energetic production to the hypothesis of a similar cluster organization of urban landscapes – restyled expression of different contexts
The territory can be interpreted as a laboratory where the implications are tested of a "thermodynamic vision" of urban landscapes, without wasting productive ground and paying attention to the identities and qualities of the different contexts.
Today Environmental Energetic Plans are supplied and the intervention of insertion of energetic devices (essentially photovoltaic) is spreading as regards building artefacts, traditionally conceived and showing no "memory" of such technology, not keen to support them.
These two routes, on a different scale, are not integrated with one another and do not develop the opportunities that the new cross-disciplinary planning approaches might allow as far as the dimension of territory is concerned.
Starting from the most relevant innovations in the international scene – articulated according to the relationship with the contexts – the possibility is taking place to point out new planning criteria and new energy products capable of replying to the current and future environmental and energetic crisis, with specific reference to the transformations of urban shape starting from new energy territories.
The idea of a centralized hub serving large territory areas can be overcome prefiguring a scenery of distributed energy production (widespread/pulverized), differentiated (micro-meso-macro) and used in situ (self-produced/used).
In the researches on mid-Adriatic city there is the hypothesis of an archipelago city, coherent, also energetically, with the idea that modifies its consolidated image of side by side strips, replacing it with a more porous and articulated arrangements.
The rhizo-somatic characters of the cell-city are outlined, formed by space territory devices (cluster or platforms) conceived as energy islands with variable dimension and configuration.
Each district-island, self-sufficient from the energy point of view and with a zero environmental balance, will take part in a territory network formed by devices and will relate to neighbouring clusters in an aggregated way, in the shape of links and dependences.
The isle within the same Mediterranean district will share all available resources, diversified on the basis of the availability of each context: sun power, wind power, biomass, cogeneration.
All the surplus of an island will be used by the island of the same district before being poured into the external net. The energy question – as tested in PRIN OP research "Public works and Adriatic city" – may represent one of the strategic keys for the design and organization of mid-Adriatic city.
Some action procedures have been defined that can be called re-generation or energy cultivation according to the potentials of the different areas.
The texts carried out in Pescara Valley have taken into account the metropolitan area as a single energy district formed by different and specific supply systems and energy production, considered also from the configurative point of view according to one articulation in punctual, linear and area systems.
Large urban areas, today mono-functional (such as the harbour area or former freight-yard of Porta Nuova in Pescara) can be changed into complex urban devices, supporting a strategic mixité of territory functions and spaces and systems for energy supply: in this way new episodes of public space emerge by means of transformation of what already exists – energy platforms, infra-green, infra-void.
As regard Francavilla Foro a territory section has been studied that by means of a valley crossroad links the hill fronts to the sea. Here the configurative actions, coordinated with one another, taking into account the possibilities offered by energy planning of territory, point out three converging strategies:
-the creation of land devices for the construction of countryside-energy landscapes that use the existing productive vocation also through the introduction – in energetic key – of new types of vertical green-houses;
-the use of the big street junction – designed and placed again – as new territory centrality with productive and commercial functions, gathered under a wide photovoltaic cover which, linked to the primary form of the knot, marks a new landmark;
-the creation of disposals in the water. The current thickening of the coastal line with the protection "breakwater brushes" is changed into a flexible system of equipped platforms that use wave movement for the production of energy: a new liquid ground which increases the quality and quantity of public space at sea.
So a new integrated landscape is realized where components are put to "react" that are usually divided or simply juxtaposed: on the other hand a procedure is accomplished where the shape of a piece of the territory becomes the aware expression of a multi-material and multi-scalar relational system.

T2 – Defining assets and devices capable of activating an energetic mix (sun, wind power, biomass, cogeneration) with the exploration of their morphogenetic role.
The traditional systems of energy production have designed parallel and often unknown landscapes (1998 – Pavia – Electric Landscapes).
The electrification of urban territories hasn't usually obeyed to the rules of urban plan design. The electrification has adapted itself to the "making" of the city. The electric nets are infrastructures that follow urban disorder. The concept of energy supply of territories and of communities is not only the one linked to electric use. As a future perspective also thermic use must be taken into account. Therefore another important aspect opens in the issues to verify in an urban design considering the morphogenetic role of devices for energies produced by different sources.
In fact the electric use has a different application and correspondence on the territory in comparison with the thermic use for instance. As a matter of fact electric use is characterized by the supply net (also with different tensions), beyond the fact of being aerial nets that can easily innervate, overlap and juxtapose to the existent situation.
In the perspective of a process of productive energy decentralization (also in the field of urban tele-heating) we notice a change in the direction of a distributed micro-generation, where proximity relationships are defined again on which urban settlement is based and, in some aspects, the organization logic itself and of construction of cities.
A change is taking place in our territories, which will soon be called (even if they partially already are, but unaware) to develop processes of re-infrastructure through the graft of self-organized devices (or eco-organized). This overlapping of use completely belongs to the logic of metropolitan territory systems – energy mix, where the whole is more than the sum of parts (I. Prigogine).
The main standards that influence the energetic relationships are: "source" devices and "drain tanks"; the relationships of self-sufficiency and/or "reliance", the processes of competition and exchange (energy sharing).
In the suggestion of a decentralized pattern dedicated areas (within a territory) are pointed out for energy production, meant as strategic areas within territories capable of activating the first energy reliance between communities and the other parts of the city (through "energy vectors").
The "source" districts, after reaching a first degree of self-sufficiency (first saturation degree, where use is guaranteed by in situ production) start defining the rules, for the exchange with "tank" territories, thus tracing those dependence relationships able to ensure widespread self-reliance in city territories.
In this phase the energy use already starts diversifying, distinguishing electric use from thermic use and considering that energy conversions are ensured in contact points (exchangers of urban hubs). In this "zero" scenery we still recognize a reliance relationship linked to the centralized exchange pattern, but we notice a first important diffusion process: the specialization of energy communities as urban hubs, energetically autarkical territories, capable of constructing the net - a typical mechanism of the market starts, through a process of competition among communities.
In this frame the "energy planning" of a territory must be built through the drafting of Environmental Energy Plans, which, by means of the creation of new project patterns, allow a real application of the will expressed by EEP themselves. The way of thinking of the project change, an expansion of the possible materials of the architectural project is noticed, of the available tools, of the reference frames (rules, laws and goal practice). It is necessary to learn how to ask the territory in order to think of it from the energy point of view.
In the mid-Adriatic city "a sidelong look from east" allows to seize the opportunities deriving from the structure and exposition of the valleys drawing the coastal comb. Throughout history river systems have determined an asymmetrical shape of sides, a different trend of crests and slopes, a different relationship of vegetation-settlement cover that allows to identify, from the energy point of view, a series of episodes, alternatively, "active", south-south west exposed, and "shadow lands".
This reading can help to identify some criteria of use of the ground that can be integrated with the sum of the other evaluation for the design of an Adriatic geo-city, conceived as a single articulated plural identity, interpreter of the substance of places, rather than juxtaposed sum of a series of administrative perimeters.
The future is linked to a key concept: the integration concept. Not only "integration" of renewable energy production systems with buildings, landscape and territory, but especially an integration among the different energy sources (a keystone for the energy question).
Besides the problem of renewable energy storage (usually insurable by means of small accumulators, such as batteries), the main problem is the fact that fundamental renewable energy (sun and wind are discontinuous sources in energy production; the hydroelectric source (water) is determined by the capacity (the rate of flow, also variable) of water flows of rivers.
The aim is to reach a multi-active territory in energetic key, where technical devices (linked to the different technologies for energy production caused by the continuous progress of research) are employed with the awareness of their capability to "produce shape".

T3 – Infrastructures as energy territories.
The coast territories have seen the unfolding of large infrastructural routes with an inattentive attitude towards the crossed cities and landscapes.
The Adriatic corridor can be compared to a long and narrow "room" of the Italian territory – running from Gargano to Romagna – maintaining its recognizable main features.
In the valley intersections, infrastructures have been able to build knots, attractors and hubs of over-local value; linear often "requires transversality" so as to start a process capable of transforming infrastructural systems into net systems.
It is necessary to be able to catch the possible nature of new urban inter-scalar organizations based on the relationship between large infrastructural frame-works and the continuously perceptible "measure" of the contexts where to anchor the material and immaterial of the supposed "endless city" (Bonomi 2004).
They are complex arrangements forming in the multi-layering combination between the morphology of territories – primary signs to consider as fundamental components of design – and new ways of functioning of the different net systems: environment, infrastructure, settlement and energy.
A planning look may perceive the potentials and opportunities offered by a rich storehouse of shapes which a renewed system of connections can activate starting from the possibility to integrate strategically the long and fast nets with the slow and ramified nets that penetrate into the valleys and reach higher hill fronts allowing their flourishing with original perspectives of development.
In this way it is possible, in different contexts, to imagine an organization capable of expressing the potentials within the development of the double principle linear city/reticular diffusion.
The principles are therefore needed to establish the congruence between urban landscapes and social landscapes, between old and new forms of use of territory and city, and the physical morphologies of change also as regards a more and more necessary attention to energy balance.
A street is not reductively a line. A line that unites and divides. The interaction in the crossed territories is so intense that it is necessary to read and plan these infrastructures, from the very beginning, as aerial figures that identify new landscapes and new arrangements and use of space.
Systems of high functional - useful and social - mixité can be integrated with the infrastructural framework (the researches on hybrid as new figure for infrastructural project in MVRDV projects, Zigzag shopping mall and a vision of A-6 Boulevard, Almere).
But the spaces of mobility, in a more proper way, may be fertile ground for the application and testing of production devices of renewable energy, building new shapes/families of figures for the "out of scale": energetic hybrid (as in Hessing Cockpit's project in acoustic barrier in Utrecht).
The space of mobility may be conceived according to principles that allow the planning of inhabited places without cars, as in the Velo City project, proposed for Biennale of Venice. In Velo City an intelligent infrastructural organism is capable of being generated, growing and diversifying. The system of infrastructural bars, like an artefact with energy needs that must project itself into the future, is provided with a saving and energy supply device (photovoltaic energy carpets, wind towers with variable geometry, voltaic trees, gate and chimneys for combustion).
Velo City represents, in an experimental way, utopic and tentative, one of the first results of energy themes applied to the "cities of mobility" and considers infrastructure a becoming organism able to modify also in relation to the variation of the mobility request and of the energy request.
In the moving scenery it is necessary to look at architecture in order to suggest strategies capable of establishing a detectable and aware dialogue between the hectic dynamics of flows – including the energy ones – and the slow change of traces and signs on the earth.

Giuseppe Barbieri - Alberto Ulisse
Universita' degli Studi "G.d'Annunzio" Chieti e Pescara, Italy

References

AA. VV.(2002), Manuale In.Fra – Forme insediative e infrastrutture, Marsilio, Torino.

AA. VV.(2002), Atlante In.Fra – Forme insediative e infrastrutture, Marsilio, Torino.

Barbieri P. (2009), Hyperadriatica – Opere pubbliche e città adriatica. Indirizzi per la qualificazione dei progetti urbani e territoriali, List-Actar, Barcellona.

Barbieri P., Pavia R., Morante M., Ulisse A. (2010), Rap-porti urbani. Esperienze di un Laboratorio Integrato – ambito Progetto e Contesto, Sala editori, Pescara.

Capra F. (1997), La rete della vita, Rizzoli. Milano.

De Santoli L. (2005), Energia e architettura, Kappa, Roma.
Droege P. (2008), La città rinnovabile, edizioni Ambiente, Milano.

Gottman J. (1991), La città prossima futura, Laterza, Roma-Bari.

Mitchell W. J. (1999), E-topia: Urban Life, Jim – But Not As We Know It, MIT Press.

Patterson W. (1999), Transforming Electricity, Earthscan, London.

Pavia R. (1998), Paesaggi elettrici. Territori, architetture, culture, Enel, Roma.

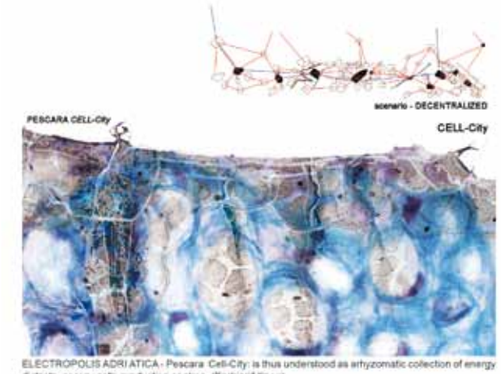
Pulselli R. M., Tiezzi E. (2008), Città fuori dal caos. La sostenibilità dei sistemi urbani, Donzelli editore, Roma.

Pulselli R. M., Romano P. (2009), Dinamiche dei sistemi urbani / Urban Systems Dynamics. Indagine di un'area metropolitana, Alinea, Firenze.

Rifkin J. (2000), L'era dell'accesso. La rivoluzione della new economy, Mondadori, Milano.

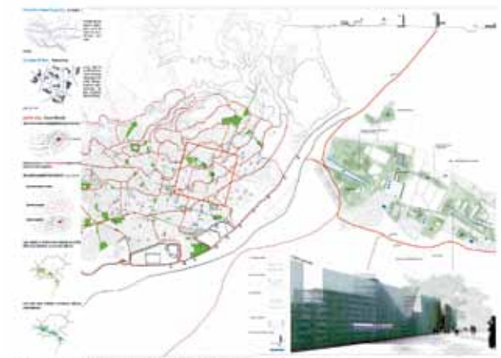
Rifkin J. (2002), Economia all'idrogeno, Mondadori, Milano.
Rogers R. (1997), Città per un piccolo pianeta, ed. Kappa, Roma.

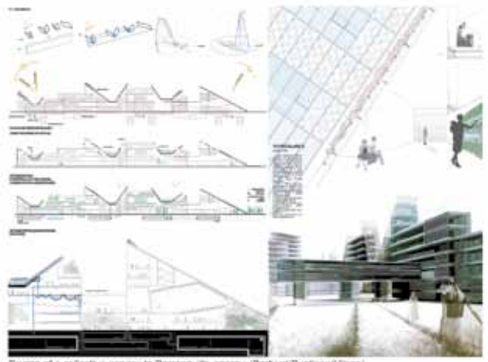
Ulisse A. (2010), Energycity – An experimental process of new energy scenarios Pescara – architecture and public space, List-Actar, Barcellona.



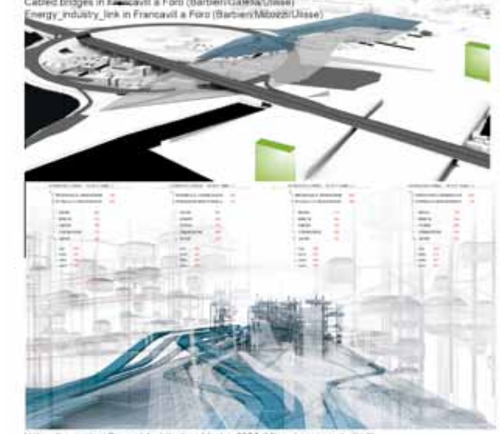
ELECTROPOLIS ADRIATICA - Pescara: Cell-City: is thus understood as arhyzomatic collection of energy districts: energy cells-production centres. (Barbieri/Ulisse)


For the large spaces freed up or converted by the city / energy islands: energetic platforms. (Barbieri/Brancaroli/Lovaglio/Ulisse)


Reading urban cleuster energy in Barranquilla. (Barbieri/Pugliese/Ulisse)


Design of a collective service to Barranquilla energy. (Barbieri/Pugliese/Ulisse)


Cabled bridges in Francavil a Foro (Barbieri/Galeta/Ulisse)
Energy_industry_link in Francavil a Foro (Barbieri/Mitozzi/Ulisse)


Velo_city - project Biennal Architecture Venice 2006 (Ulisse/unoeunostudio.it)

Constance C. Bodurow
Lawrence Technological University, MI, USA

The Next Generative Infrastructure for Detroit

Detroit has a wealth of empty space, though little intelligence or understanding of it. There is a global, morbid fascination with Detroit's emptiness. The media and design disciplines have mythologized it in imagery, and obsessively mapped and quantified it (the reported yet disputed 40,000 parcels – FIG 1).
Vacancy perpetuates entrenched social, economic and environmental disparities and inequities. Yet, in the midst of formal 'right sizing' and informal urban agricultural initiatives, a constructive civic dialogue about the role of vacancy in the future of the city has yet to begin.
Our transdisciplinary design research lab wishes to prompt the dialogue. A new urban geography and ecosystem are required. Vacancy is a new infrastructure for the city. Vacancy, as it manifests, in land, buildings and infrastructure, is generative. We recommend a variety of productive, temporal uses for vacancy, to generate the next urban form of the city. In the same manner that grid and infrastructure become generators of urban form and use (Smithsons, Martin, Banham, Varnelis, Belanger, et al), vacancy can guide future urban form in Detroit.
I define infrastructure networks as the systemic and complex overlay required to support a city and its associated urbanized region. Connections occur largely through blue|green|gray + white infrastructure networks that span geographic, ecological and political boundaries. Vacancy emerges as the ubiquitous infrastructure in each of these typologies.
This paper describes aspects of our current project to create sustainable community through net zero energy, and the central role which vacancy plays in achieving that goal. In one neighborhood of Detroit, we propose interventions for hybrid renewable energy, targeted density, water cycle management, and reforestation. Each envisions an alternative, equitable, and sustainable ecosystem for the city.

I. Introduction + Context

This paper describes the approach, methodologies, and design applications developed by the author and studio[Ci] @ Lawrence Tech University. A new urban geography and ecosystem are required to balance the benefits and impacts of both shrinking and rapid urbanization. In response, we created the Ci methodology and GeoDesign interface to proactively design for the "coming together" of criteria into a spatial convergence. Our approach is transdiciplinary, integrative and collaborative. We combine urbanism, architecture, and engineering in a value/resource-based, community driven process. We utilize our interface to map data and conduct analysis then develop urban design interventions based on indigenous capacities, and abundant assets able to be geospatially mapped. Our current design application, proposes Detroit's first Net Zero Energy Community in Southwest Detroit (SWD).[1] As a result of this work, a relationship between infrastructure and vacancy in the city emerged, and prompted recommendations for generative uses for vacant land, focusing on renewable energy, target mixed use density, water cycle management and reforestation, in support of sustainable community and economic growth.
We work primarily in Detroit, Michigan USA, 16th largest city in the US[2], and located at the center of the Great Lakes Basin bioregion. Specifically, SWD, a 12,450 acre (5038.336 hectares) neighborhood bordered by the CBD to the east, the Detroit River (and Canadian border) to the south and the Rouge River to the west (FIG. 2), which is growing and thriving and defying the generally negative media generated depiction. Currently facing state receivership[3], the city has been and continues to be well documented in the national and international media.[4] Despite the prevailing perception, SWD is a diverse and vibrant community, one of the only neighborhoods in Detroit that is adding population, largely due to immigration, and serves as an ideal prototype for building a sustainable community.
SWD has 106,749 residents in 41,694 households.[5]
SWD has extensive capacities and assets, identified in six categories (FIG 3). SWD contains the junction of major highway and rail infrastructure, and serves as a critical regional transportation hub.
Two infrastructure projects, the Detroit Intermodal Freight Terminal (DIFT) and the New International Trade Crossing (NITC) represent billions of investment from both the US and Canadian Federal governments.[6] The neighborhood (and adjacent areas) has a base of high wage jobs and established employers.[7]. Brownfields, and vacant buildings and parcels offer opportunities for generative use.

Cities are dynamic, existing in a state of continual change along a spectrum of urban growth-stasis and regression. "Shrinkage" as an urban phenomenon has existed in the continuum of cities for millennia. In the last decade, the concept of urban shrinkage has been reinterpreted in concert with the reality of a globalized social, economic and environmental context, associated with the Post Industrial city[8]. "Shrinking cities" have populations of 100,000 or more, with losses of over 10 percent in the last five decades[9]. The phenomenon was formalized by the German Federal Cultural Foundation's Shrinking Cities Project[10].
Detroit's, shrinkage has occurred over 50 years of slow attrition, and is the "poster child" of urban shrinkage. As such, an entire creative industry has emerged around a morbid fascination with Detroit.
Rendered with all the "usual suspects" of its globalized image: aerial views of abandoned auto factories, the 1967 riots/civil insurrection, decaying landscapes and resilient citizens, all cued to a techno soundtrack [FIG 4]. After the Stalking Detroit initiative at the outset of the 21st century[11], a flood of designers have studied the "blank slate" of Detroit's vast abandoned geography. This morbid fascination seems far from culmination, with the release of Detropia at the 2012 Sundance film Festival. Despite widespread attention, there have been few workable recommendations to prompt change in Detroit's condition. Needed are interventions which address the issues facing the city: sustainability in a challenged economic climate, citizens' self-determination, energy and food production, social relations and environmental sustainability.[12]
Within this context, the public, private and institutional sectors are acting to address Detroit's condition, with a particular emphasis on vacancy. The city is spending millions in federal funding to demolition vacant homes with a goal of 10,000 structures over four years[13]. There is little municipality leadership on the issue, so a number of nonprofits are addressing the city's condition of vacancy, with a primary focus on residential structures and land. Community Legal Resources (CLR) delivers free legal services to nonprofit organizations building neighborhoods in Detroit.[14] Since 1998, CLR has supported the Detroit Vacant Property Campaign (VPC). VPC assists citizens and property owners and has developed a strategy which includes inventory and assessment of vacant homes; etc".
Data Driven Detroit (D3) was established in 2008 as an independent data center to promote positive community change by: "tracking neighborhood-level social, economic and environmental indicators for the local initiatives of key foundations…Building a community data warehouse of comprehensive, reliable, relevant information relating to social, economic and environmental indicators."[15]
In 2009, D3 mapped vacant land through the Detroit Residential Parcel Survey, with the Detroit Office of Foreclosure Prevention and Response (FPR), and CLR. The survey revealed that more than 218,000 or 95 percent of single-family homes suitable for occupancy (FIG 5). The survey also found that 26 percent of the city's residential parcels – or 91,000 lots – were vacant.[16] The survey did not identify vacant property that is primarily industrial or commercial.[17]
To address disinvestment, vacancy, and other structural issues, the current Mayor initiated a "rightsizing" plan for the city, entitled the Detroit Works Project[18]. Launched in 2010, the project is "a process to create a shared, achievable vision for our future that would serve as a guide for improving the physical, social and economic landscape of our city."[19]
The Mayor announced some neighborhoods of Detroit would be abandoned and residents relocated.
Understandably, this prompted a series of contentious public meetings.[20] In response, the Mayor hired new consultants and split the project into two tracks - Short Term Actions for three Demonstration Areas[21] with the intention is "realigning some city services, and leveraging investments…to improve the market conditions…"; and Long Term Planning, which focuses on a "Strategic Framework Plan" outlining a series of recommendations to "Encourage innovative and productive ways to use land and improve the city's infrastructure."[22] Skeptical of the Administration's process and methodologies, the city's NGO community is pursuing parallel planning initiatives.[23]

Productive use for vacancy has come from urban agricultural initiatives. Led by the Greening of Detroit (TGD), with a mission "guide and inspire the growth of a 'greener' Detroit through planting and educational programs…and by building community capacity." [24] Zoning does not allow urban agriculture, but TGD collaborates with Planning to secure vacant lots. Since 2003, TGD's Garden Resource Program[25] supports over 1,300 gardens and farms and operates three urban farms and markets, provided farming resources and educational opportunities to over 15,000 urban gardeners in the cities of Detroit, Hamtramck, and Highland Park, including Romanowski Park in SWD, with athletic fields, a pavilion with teaching gardens, a 100+ fruit tree orchard, and a large community garden.
Diverse initiatives exist related to vacancy in Detroit, several addressing land use, but few address design and long term intervention. A constructive civic dialogue about the role of vacancy in the future of the city has yet to begin. I wish to prompt that dialogue.

II. Theory + Inspiration

"Passaic seems full of 'holes' compared to New York City…and those holes…are monumental vacancies that define, without trying, the memory traces of an abandoned set of futures"."[26]
Many have addressed vacancy in the metropolis. Lerup could be speaking of Detroit, describing Houston's holey plane: "Here space in the European sense is scarce, perhaps nonexistent. With neither sea nor confining walls to define it, it consists only of a mottled plane to navigate…also crude and wild, marked by fissures, vacated space. Patently unloved yet naturalistic, this holey plane seems more a wilderness than the datum of a man-made city."[27]
Banham introduced the concept of the city as an ecological entity, identifying four typologies based on geography and infrastructure[28], Lerup's assertion that "the city must be seen as an organism… if not strictly or classically a city, then certainly an ecology..."[29] inspires our attitude.
Lerup creates the concept of "stim and dross": "precariously pinned in place by machines and human events these become the points of stimulation - stims" and Dross as – "the ignored, undervalued, unfortunate economic residues of the metropolitan machine."[30]
Detroit, with its dysfunctional real estate market and undervalued land, defies Lerup's analysis to an extent. But relevant is his discussion of an expanded notion of value, one which I have asserted in my theory of Value Densification[31]. In Houston, speculative investment plays a stronger role in
patterns of vacancy. But in Detroit, most vacant land is publicly owned. Further, Detroit's vacancy is highly associated with infrastructure networks, a legacy of the spatial logic of the automobile industry that shaped and dominated the city for so many decades. While vacancy is vast, public ownership and advantageous physical adjacencies make the condition more tractable for change.
Berger expands Lerup's concept of dross: "dross is understood as a natural component of every dynamically evolving city. As such it is an indicator of healthy urban growth. Drosscapes accumulate in the wake of the socio- and spatio-economic processes of deindustrialization, post-Fordism, and technological innovation"[32] "…undervalued for many reasons (pollution, vacancy, natural conditions unsuitable for building, unprofitability, etc.)."[33] This author would also add racism and the inherent inequities of the capitalist system.
Detroit differs from Berger's assertion that "drosscapes are interstitial…these…places exist outside the city's effective circuits and productive structures…" In Detroit, dross is highly associated with infrastructure and integral to neighbourhoods and districts.
I am influenced by Berger's theories, though I focus less on externalities (contamination, capitalist potentials), and more on inherent "capacities" and associated generative possibilities. While economic value is a by-product, it should be dispersed and shared, rather than concentrated in singular owners.

Limited Intersections [the new geography]

I investigate the role that density plays in sustainable urbanism, but have proposed an alternative theoretical approach which is neither optimistic nor pessimistic[34]. I accept Detroit's regressive form and context in the way that Banham described LA: "The belief that certain densities of population, and certain physical forms of structure are essential to the workings of a great city… must be to that same extent false."[35]
Convergence of Intensity [Ci] is our value based approach[36] which meditates the two ends of the density spectrum. Our methodology presents an alternative, ethical approach. Ci proposes specific criteria for the "re-sizing" of the post-industrial city, arguing that balanced, sustainable, dense and urbane development is still possible. Decisions about future urban form in Detroit should be criteria (vs. data) driven, so I created the Ci methodology and GeoDesign interface to proactively design for the "coming together" of metrics [criteria] in three categories: Human [inhabitation]; Cultural [place], and Infrastructure [ecosystem], into a spatial convergence.
The fundamental question in "re-sizing" the city is: where and how will we sustainably redevelop [densify] and support resident populations with infrastructure, services and investment? Since answers to this essential question have been dominated by capricious political, market, and/or social forces, the consistent description and application of metrics [criteria] are essential.
I accept current theoretical and design approaches of systemic design[37] and sustainable urbanism[38].
No matter its growth profile, the city is a consumptive entity, challenging its ecological context, as Mostafavi observes.[39]For civilization to endure, cities must begin incorporate the natural systems that support their existence[40]. Within this systemic approach I define urban infrastructure broadly as blue|green|gray + white and view it as the new eco-system of the sustainable city, both reinforcing and defying social, political, and cultural boundaries in the same manner as natural systems.

III. A new Urban Infrastructure Ecology

Infrastructure networks are the systemic and complex overlunderlay required to support a city and its associated region. Infrastructure is a key determinant of future urban form, and plays a significant role in establishing a more desirable and sustainable condition for urban growth and change.
Infrastructure defines the natural and built ecosystem of the city. The convergence of multiple blue|green|gray + white infrastructure systems indicates the new geography of the city.
Detroit is rich with technological infrastructure supporting manufacturing, movement of goods and services and the associated human settlement. Defining "blue|green|gray + white": green infrastructure describesnatural flora and fauna and their related habitats, man-made landscape and greenway networks, precipitation collection, and criteria-rated buildings, sites and neighborhoods; blue infrastructure describes the watersheds, floodplains, wetlands, and hydrology, gray infrastructure is entirely man-made, including highways, roads, rails, digital technology, and associated environmental impacts, and white is associated with telecommunications, energy generation and delivery. The resultant complex networks range in scale from the local and regional, to international scales.
Traditionally, urban infrastructure is defined as the grid. Martin proposed: "The grid of streets and plots… is like a net placed or thrown upon the ground" and: "the understanding of the way the scale and pattern of this …net or grid affects the possible building arrangements on the land within it is fundamental to any reconsideration of the structure of existing towns."[41]
The grid as "net" is a vivid image: a flexible structure that can be mapped, lifted and deployed in more creative and generative ways. Detroit's extensive grid (and its associated and dense infrastructure of utilities that must be maintained by a bankrupt city) actually acts as an inhibitor of growth and change.
The redundant grid associated with vacancy should be decommissioned and repurposed in support of new landscape ecologies.
The Smithsons add: "mobility has become the characteristic of our period… roads (together with the main power lines and drains) form the essential physical infrastructure of a community… roads …are physically big, and have the same power as any big topographical feature, such as a hill or a river, to create geographical, and in consequence, social divisions."[42] I ask: what if roads were not the only mode of mobility - or system for energy delivery, public lighting, water management systems - in the city? What if infrastructure did not divide, but in a hybridized form, created spaces of connectedness? In Detroit, where the municipality cannot maintain roads and 1/3 of adults do not own a car, the extensive network is obsolete. How can infrastructu

re serve necessary and sustainable functions and create geographical features without division? Other cities are pursuing this approach.[43]

Varnelis claims: "setting out to understand…all contemporary cities, we treat it in terms of networked ecologies, a series of co-dependent systems of environmental mitigation, land-use organization, communication and service delivery…these infrastructures form the basis of the contemporary city, but they are vastly different from the infrastructures of old."[44]
Vacancy emerges as the ubiquitous infrastructure in each blue|green|gray + white typologies. Far from the interpretation of vacancy as a potentially or actually detrimental element of the city, I see vacancy as it manifests:in land, buildings and infrastructure, as generative (capable of producing or creating) and of use in leveraging investment and other externalities. Vacancy provides an armature for collective dialogue, design intervention and policy. recommend a variety of productive, temporal uses for vacancy, a generator of urban form and use, especially if hybridized with other infrastructures. As inherent and indigenous assets, vacant areas do not necessarily need to be rewoven into the urban grid and fabric in a traditional sense. Rather, they should take on new roles in their next iteration, though still connected and integral to existing and emergent spatial, social and natural systems.

Systemic Overlay

We have created a Systemic Overlay of infrastructure to understand the profound connections and relationships between neighborhoods, city, and regional and international contexts. These environmental, social and economic connections occur largely through blue|green|gray + white infrastructure networks that span geographic, ecological and political boundaries.
FIG 6 illustrates the compilation of multiple mapped data layers of infrastructure networks and systemic connectivity, representing the convergence of the multiple infrastructure systems that define the region and can be built upon to reinforce the net-zero energy vision. The Systemic Overlay also helps to define the 'geographic convergence' and locations of each of our proposed four Energy Hubs and Sub- Hubs, along with their connective blue|green|gray + white infrastructure systems. FIG 7 details the data layers in four categories.

IV. Methodology + Application

I am primarily a humanist and urbanist, but influenced by geography and landscape methodologies, including Corner's "agency of landscape"[45]. Corner's threefold purpose: retrieval of cultural value; enhanced social program and utility; and restored ecological succession, has influenced my attitude and design approach to vacancy in Detroit.
Emergent infrastructures should leverage local assets and indigenous capacities. Large swathes of SWD, including the Port of Detroit, the DIFT and the NITC, are certainly a"logistics landscapes", as defined by Waldheim and BergerGiven this reality, I strive to integrate the cultural landscape, drawing them "together through shared spatial and material languages."[46]
A fundamental objective for our Ford C3 project has been repurposing vacant land in SWD and its potential larger role in influencing the future of urban form in Detroit. GeoDesign interface analysis yielded 1,571 acres (635.761 hectares or 635 hectares and 7611.4 m^2) of vacant land. For design purposes, we categorized parcels into three categories: Vacant (V) 30%; Vacant w/abandoned structures (A) 30%; and Vacant w/occupied structures (O) 40% of parcels identified. FIG 9 illustrates the spatial dispersion of vacant parcels and the concentrations of vacancy in SWD: largely in the Condon and North Corktown neighbourhoods and arrayed along gray infrastructure corridors.
We recommend diverse new and reinforcing generative use for the repurposing of vacant land, including: 1 NATURE: reforestation, water cycle management, and urban agriculture; 2 ENERGY hybrid alternative (renewable) energy, including solar, geothermal and hydro-current; and 3 DENSITY: areas for targeted density (both built and population). FIG 8 illustrates these proposed generative uses and how they array spatially in SWD; approximately 1,500 acres (635 hectares) of vacancy, in three categories. This new armature, in close proximity to infrastructure systems, supports our recommendations for generative uses for vacant and decommissioned land, buildings and infrastructure. I focus on Detroit's most iconic examples of vacancy (e.g. Michigan Central Station), those juxtaposed to economic stability providing opportunities to engage partners and remaining residents in joint ownership, training and management (e.g., Condon Neighborhood), and proposed regional/international infrastructure investment (e.g., DIFT). Each envisions an alternative, equitable, and sustainable ecosystem for the city.
The highest concentration of vacancy in the SWD community occurs in the Condon neighborhood at the northern boundary at Tiremanxlvii. This presents an opportunity to identify, quantify and assemble vacant parcels and re-purpose them for generative use. As illustrated in FIG 11, we identified vacant parcels and proposed segments of adjoining decommissioned street grid while maintaining access for current and future land use.

Design Interventions: nature, energy, density

NATURE: 1,100 Acres
V: REFORESTATION at the DIFT
We recommend that 1,100 acres of vacant land along rail lines in SWD, with a large concentration in the vicinity of the proposed Detroit Intermodal Freight Terminal (DIFT), should become urban forest of deciduous trees (averaging 21 trees/acre). Urban forests provide: Urban Heat Index Reduction - the shade cast on buildings can reduce energy usage during the warmer months, for a savings of 8,400,00 kWh annually; Stormwater Run-off Mitigation - reforestation intercepts 90% of stormwater run-off, resulting in,for SW Detroit, averting up to 227,187.18 ft of runoff/year; Carbon Sequestration – trees sequester carbon from the environment through photosynthesis and store the by-product in the tree volume of bio-mass, which could mean sequestering up to 2.1 million tons of CO /year; Psychological + Economic (Social) Effects – studies have found the visual presence of forests have a positive effect on emotional wellbeing, and generate increased economic and community use.

ENERGY: 100 Acres
A: ENERGY FARMS at Thyssen Krupp/Condon Neighbourhood
This Hub and its three Sub Hubs, selected for concentrations of vacant land, offer opportunities for the large scale generation of solar and geothermal energy, to decommission and repurpose redundant grid, and engage potential partners. We call these repurposed areas of SWD Energy Farms, utilizing vacant land and adjacent decommissioned street grid for the generation of alternative energy and also for water management (rainwater collection and stormwater mitigation) through conversion to pervious surfaces and integration of bioswales. We recommend 100 acres of solar array installations and geothermal well fields - implemented on multiple acres to single lots – which could produce energy to meet neighborhood electrical and mechanical demand. Partnerships with Lawrence Technological University, DTE, ThyssenKrupp Steel, and Coca Cola will create a new Education/Research entity at the former Biddle School and the Sampson Weber Academy and "Outdoor Classroom" for the development, manufacture, installation, and maintenance of solar and geothermal technologies. A management model should be developed which allows adjacent property owners and residents to be trained to play a role in the operation of the Energy Farms, allowing remaining citizens in depopulating areas the opportunity to have a generative role in the community.

DENSITY: 10 ACRES
O: at the Convergence of Infrastructure
We have identified approximately 10 acres to catalyse intermodal oriented development in the vicinity of Michigan Central Station [MCS]. Infrastructure to support projected new built density and population includes: a proposed passenger rail stop at MCS, a proposed BRT stop on Michigan Avenue, a Detroit DOT bus stop on Vernor, and new on-site electric vehicle designated parking spots, general public parking, and bike racks. A new pedestrian bridge is planned to span across our proposed MCS International GreenLink and the rail corridor connecting the Mexicantown and Corktown neighborhoods. The area contains occupied structures and emergent uses related to Roosevelt Park and MCS. MCS [solar]: since its opening in 1913, MCS has served as a hub of activity for Regional Detroit. MCS is iconic -- both in its form and its abandonment and transformative: from travesty to icon of the city's future – one of hope, vision and sustainability. Through extensive Ecotect modeling and use of a Markvart table for calculating optimal solar energy, we determined that MCS [solar]'s south, east and west facades and roof are ideally oriented to maximize solar collection with a photovoltaic array that would not preclude adaptive reuse of the historic structure. We designed, then deconstructed, the façade to analyse how many photovoltaic panels it contained, how much square footage we had achieved (approximately 114,476.8 sf), the facing direction of each panel, and at which angle each panel resided in reference to the horizontal plane. Based on our analysis, MCS [solar] could generate substantial alternative energy to support future adaptive reuse and for the surrounding neighborhood.

V. Conclusion

Vacancy can become a generative infrastructure when hybridized with adjacent blue|green|gray + white infrastructure, generative of emergent spatial, social, and natural systems. As illustrated with our initial design interventions, vacancy in land, grid and buildings can create a new geography which speaks to the future of the city. We employed our methodology and interface to support the creation of both formal and policy recommendations to encourage decision making around balancing the long term benefits and impacts of rethinking this hybridization of natural systems, infrastructure, and an expanded notion of urban density. While Detroit serves as the context for our first design interventions, we believe that our design methodology is scalable and replicable to prompt dialogue and guide the future form of urbanized regions across the globe.

Bibliography

Berger A D Drosscape. New York, Princeton Architectural Press, New York, 2006.

Berger, A Systemic Design can Change the World, SUN architecture.nl [English edition], 2009.

Banham, R. Los Angeles: The Architecture of Four Ecologies, University of California Press, Berkeley and LA, 1971.

Bodurow C C D IND DEV: Industrial spatial logic and the transformation of the city. In Proceedings of the ACSA Central Regional Conference, University of Wisconsin-Milwaukee School of Architecture and Planning, Milwaukee, Wisconsin, 2006.

Bodurow C C City of Worth: Value Densification Community Pilot Project (VDCpp). In Proceedings of the ACSA Annual Meeting, University of Houston School of Architecture, Houston, Texas, 2008.

Bodurow C C Research Partner, Research Partner and Research Assistant Multivariable Value Densification Modeling Using GIS. Transactions in GIS, 13(s1) Blackwell Publishing Ltd., 2009

Bodurow C C We are (or aren't) alone Second thoughts on Shrinking Cities. Detroit, Metro Times, 2007.

Brown, H, Infrastructural Ecologies: Principles for Post-Industrial Public Works, The Design Observer Group, 2010.

Corner, J. Ed. Recovering Landscape, Princeton Architectural Press, 1999.

Koolhaas R Delirious New York: A Retroactive Manifesto for Manhattan. New York, Oxford University Press, 1978.

Lerup, L. STIM & DROSS: Rethinking the Metropolis, Assemblage 25, MIT Press, Cambridge, MA, 1995.

Lerup, L. After the City, MIT Press, Cambridge, MA, 2000.

Maas W (ed) MVRDV: KM3 Excursions on Capacity. Barcelona, Actar, 2006.

Martin, L. Grid as Generator, Urban Space and Structure, Cambridge University Press, 1972.

McHarg I L Design with Nature. Garden City, NY Natural History Press, 1969.

Mostafavi, M. with Doherty, G. Editors: Ecological Urbanism, Harvard University Graduate School of Design, Lars Müller Publisher, 2010.

Oswalt P Shrinking Cities. www.shrinkingcities.com

Perloff H S Planning The Post-Industrial City. Chicago Planners Press, 1980.

Sassen S The Global City: New York, London, Tokyo. Princeton and Oxford, Princeton University Press, 1991.

Shaw D V 2001 The Post Industrial City Handbook of Urban Studies London Sage Publications Ltd Smithson, P., A. Team 10 Primer, MIT Press, Cambridge, MA, 1968.

Varnelis, K, Ed., The Infrastructural City: Networked Ecologies in Los Angeles, Barcelona New York, Actar, 2009.

Waldheim C and Berger, A, Logistics Landscape, Waldheim and Berger, Landscape Journal, 2008, 27:2-08, 2008.

Waldheim C (ed) The Landscape Urbanism Reader. New York, Princeton Architectural Press, 2006.

Waldheim C, Daskalakis C, Young J (eds) Stalking Detroit. Barcelona, ACTAR, 2001.

Endnotes

[1] Definition for a Net Zero Energy (NZE) Community from the U.S. National Renewable Energy Lab: "A net zero-energy community (ZEC) is one that has greatly reduced energy needs through efficiency gains such that the balance of energy for vehicles, thermal, and electrical energy within the community is met by renewable energy."

[2] US Census, 2010

[3] http://www.nytimes.com/2012/03/08/us/mayor-of-ailing-detroit-resists-outsidetakeover. html?_r=1&ref=monicadavey

[4] Carr D 2009 Investment in a City of Struggles. New York, The New York Times

[5] US Census, 2010

[6] http://www.michigan.gov/mdot/

[7] Ford Rouge Plant, Severstal Steel, National Steel, The Port of Detroit, Thyssen Krupp Steel, Detroit Thermal Energy (DTE), et al.

[8] Perloff, 1980

[9] Wolf-Powers, 2007

[10] Oswalt, 2004. The Shrinking Cities project featured four cities - Detroit, Ivanovo, Manchester / Liverpool and Halle / Leipzig. See: www.shrinkingcities.com;

[11] Daskalaskis, G., Waldheim, C., & Young, J. (2001)

[12] Bodurow, 2007

[13] HUD funding from the Neighbourhood Stabilization Act. By policy, NSA funds cannot be used for revitalization, only demolition.

[14] http://clronline.org/about

[15] http://datadrivendetroit.org/

[16] The VPC and D3 have recently mapped updated data of Detroit's reported 40,000 vacant parcels, but have not been made data publicly available.

[17]http://datadrivendetroit.org/projects/detroit-residential-parcel-survey/

[18] Happold Consulting for the City of Detroit, The Detroit Works Project; Phase One: Research and Priorities Policy Audit Topics, in progress V2-December 22, 2010. See also: Restarting The Motor City: Bing, Detroit begin crafting city's future with community meetings, by Steve Neavling, Detroit Free Press, September 15, 2010
[19] http://detroitworksproject.com/

[20] See: http://www.mlive.com/news/detroit/index.ssf/2010/09/detroit_works_project_bing_see.html

[21] Criteria for selection of the demonstration areas were never made public. Of the three the first is in our study area: Hubbard Farms/Southwest.See: http://www.detroitmi.gov/DepartmentsandAgencies/MayorsOffice/Initiatives/ShortTermActionsfortheDetroitWorksProject/DemonstrationAreas.aspx

[22] Ibid

[23] CDAD's Neighborhood Revitalization Strategic Framework which identifies nine neighbourhood typologies. See: http://cdad-online.org/resources/strategic-framework/; and http://www.crainsdetroit.com/article/20110731/FREE/307319973/questions-dog-detroit-works-planadvocates-want-to-see-long-term-strategy#

[24] http://detroitagriculture.net/

[25] The founding partners of the Garden Resource Program Collaborative are TGD, EarthWorks Urban Farm, Michigan State University Extension, and the Detroit Agriculture Network.

[26] Lerup, p. 85

[27] Lerup 1995, p. 87

[28] Banham, 1971, p.

[29] Lerup 1995, pgs. 88-89

[30] Lerup, p.93

[31] Bodurow, 2006, 2008, 2009

[32] Berger, 2006, p. 36

[34] See Bodurow (2010) for discussion of "Unlimited Vacuum" and Unlimited Capacity" in the spectrum of urban density.

[35] Banham, 1971, p. 218

[36] Building on the author's theory of Value Densification:" a focus on investment and density in neighbourhoods and districts were social, cultural and infrastructural value and densities are in evidence", first published in 2006.

[37] Berger, A 2009

[38] Joachim, Mitchell, "Envisioning Ecological Cities", Ecological Urbanism, Harvard University Graduate School of Design, Lars Müller Publishers: 2010; pages 224-229

[39] Mostafavi, Mohsen, 2010, p. 17

[40] Specifically, the Cities as Sustainable Ecosystems [CASE] method, based on the Melbourne principles, described in Newman, Peter and Jennings, Isabella: Cities as Sustainable Ecosystems: Principles and Practices, Island Press: 2008

[41] Martin, 1972, p.

[42] Smithson, 1968, p.

[43] Applebaum, A., New York's Green Grid, April 17, 2011, The

Fabio Casiroli
Politecnico di Milano, Italy

Urban Mobility Footprints

The future of the human race will be ever more urban and less rural. According to the UN forecasts, in 2015 one and a half billion people will live in cities with over one million inhabitants and 360 million will live in megalopolis with populations of over 10 million. The majority of these human beings will be forced to live in desperate conditions. And the less planning that goes into this growth, the worse the situation will be.

Housing, health, security, schooling, jobs, culture: the key themes, each deserving great care and attention. But if we analyze the real criticalities that world citizens place at the top of their list of needs, what nearly always stands out in first place is 'movement', the 'getting round' from one point to another. And sure enough, getting round is not always easy, in poor countries as in the rich ones, even if there are virtuous exceptions to this rule (Curitiba and Bogota, just as an example).

Getting round within cities produces changeable urban forms which mutate depending on the mode of transport used and the time of day. Using the 'movement' itself as a reading key for the urban form opens up unexpected horizons, particularly if you consider territorial and transport planning as two parts of the same thing.

Do the cities have constant or changeable forms? It is easy to say "changeable" if one is thinking in the medium or long term, but in the very short term, a day or a week, the answer is not so easily taken for granted. Or perhaps within a limited time frame which is not long enough to physically change urban spaces, the most obvious answer is "constant".

Yet this question seems to me a topic worthy of patient research. These reflections on changeable city shapes come from a conceptual approach capable of correlating their respective structural parameters. Although these parameters are antique, they also have powerful explanatory potential and have benefited from operational research instruments of transport planning and traffic engineering. This has allowed an unconventional reading of the forms of cities and megalopolis, with the objective of demonstrating how the construction of integrated and rational mobility networks can benefit the balance of even complex urban organisms.

The principle objective of the research, which I have tried to demonstrate experimentally by "quantifying the countable", is to find a new way of reading urban organisms, demonstrating that their form changes in relation to the mode of transport utilised and the time of day that is looked at. Thereby providing evidence of the usability intervals which allow for "city use". Far removed, therefore, from the form that we are used to seeing on maps, a form defined by administrative boundaries, representing a necessary simplification which ensures the governing of the urban machine. However these forms are insufficient to express the complexity and the degree of use by residents and city users .

The results obtained showing the most essential features, are comforting, and usefully appear to have developed a method that doesn't limit itself to the analysis of the phenomenon, but allows for measurement of the consequences of strategic urban interventions, which is indispensable in improving quality of life in these potent clusters of people, functions and opportunities that are "cities".

How much will accessibility to a particular place be modified if a metro line is built? What accessibility will be guaranteed to a new multi-functional settlement by a new road network?
And therefore, to what measure do planned interventions become integrated into the city? And by how much do they improve it or make it worse? To these and questions of a similar nature, the responses are necessarily approximate in certain quantifications, being that this discourse is only a first step.

The changeable city forms are generated starting from urban 'focal points' and are transformed in relation to the mode of transport used, the time of day and the day of the week that the urban spaces are 'used' or 'exploited'. This means that in order to correctly read the shape of the functional city, the fourth dimension must be used, not in terms of space, but in terms of time. Here, an intangible element of nature such as time can be transformed into an instrument of actual and material city measurement. This seems an issue worthy of attention.

To facilitate the comparisons of such different realties that exist between cities, a stable and constant scale has been utilised: 80 by 80 kilometres. In that way all the major urban nuclei are contained within the analysed areas.

The top left image in the figure shows the "Working Milan" at 8 in the morning on a week day. The highlighted area shows the size of the city based on the number of people who can get to the heart of the city by car within 45 minutes. 2.2 million people live in this area. At the same time of day, the use of public transport allows for an expansion of the area served, particularly along rail lines, although the transport services cannot always guarantee punctuality, frequency and comfort (top right image in the figure).

If we look at "Sportive Milan", everything changes. Imagine we have to get to the soccer stadium on Saturday evening for a concert or a football match: the road network is no longer congested and the area accessible within 45 minutes by car expands, capable of serving 4.3 million inhabitants (left central image in the figure). The absence of public transport on the contrary, renders the journey home complicated and the metropolis contracts dramatically (right central image in the figure).

Different times of day, different modes of transport, different city shapes. Milan still remains the same, but its functional form changes, never coinciding with its own administrative limits. The lesson is: widen our view beyond all borders.

Los Angeles, the city of the car that excludes anyone who doesn't own one, and Tokyo, the megalopolis that offers 20 hour efficient and permeated transport: two extreme cases showing how knowledgeable investments produce more accessible cities for everyone.

From this premise is born the idea of a city ideally called Khrónopolis , to underline the fact that 'time' is its fundamental matrix. A city that doesn't exclude cars, but which offers public transport modes and space for mobility so efficient and permeated as to relegate the use of the car to a secondary option. The principles of Khrónopolis can be applied to existing cities as well, as long as a new conception of urban mobility is accepted, capable of radically mutating the conditions of use for existing spaces.

The proposed "model" defines a city where the location of urban functions and transport lines are organised so as to ensure reduced travel time, less than 45 minutes. A city like that would be a collective place or aggregation of people, in accordance with the original double meaning of the word. It would be a harmonious place, able to govern the rhythms of daily life and trade (of values, goods, knowledge and emotions). If it is true (as has been demonstrated in the megalopolis examined) that, where the collective transport systems have been designed as an integrated network, the urban structure has supported the increasing demand for mobility, then the proposal that follows can reasonably assume that public transport will be the main system within the new urban model. The network articulation will be dictated by geographic, historical and economic conditions of the site where it will be applied. In reality, each city should be able to contain the essence of Khrónopolis within its own DNA, i.e. those minimum elements which, with appropriate adaptations, can guarantee the conditions necessary for widespread and constant mobility, with travel times being constantly less than one hour.

Khrónopolis is based on certain vital principles:
• respect for the geographical, historical and economic premises;
• favouring public transport and forms of mobility, but not eliminating the means of private transport, rather redefining them in terms of their hierarchies and their forms;
• promoting high density population settlements, resisting any temptation of dispersion in the territory (the damage that the phenomenon of sprawl has generated is incalculable);
• proposing of a "modular grid", although malleable and adaptable to complicated orography surfaces;
• leaving freedom of volumetric and planimetric organization to the imagination of designers;
• defining the "centre" as a place of particular attraction which is not subject to the traditional life rhythms of any urban organism nor characterized by greater pressures during peak hours of working days;
• distribution of functions which are quantified in an inversely proportional ratio to their scarcity and situating them in conjunction with the transport systems;
• offering its citizens consistent travel times, with the possibility of accessing public transport from any point going towards any function within constant intervals. This will lead to a maximum travel time of 45 minutes, even in worst case scenarios, with efficient services throughout the day.

In Khrónopolis®, the connective system, based on both collective and individual public transport, is divided into four hierarchical levels and constitutes the true backbone of the model.

The first level (line in red in the figure) consists of the rail system for which a by-passing underground tunnel and stations of various functional levels are needed. One station for services on an upper-regional and continental scale (presumably including high speed trains) strategically located near the functions that catalyse mobility in vast, even continental areas. The other, for services on a regional and metropolitan scale, is strategically positioned, as shown in the illustration. The dimensions of the stations will be generous enough to allow multiple parallel tracks, ensuring the most efficient conditions of exchange between the different railway systems and also between the railways and the urban transport network. These also include the collection hubs for retail goods. From these hubs to the points of sales, a capillary distribution is foreseen, using zero emission transport systems.

The second level (in blue in the figure 9) consists of the traditional metro lines. The crossed double ring configuration, after a lot of experimentation, has revealed itself as the most efficient for guaranteeing network connection at levels both upper and lower, and for a speedy distribution of large numbers of passengers. The stops are strategically located so as to ensure efficient, direct and numerous interchanges. The headway of the service should be around every 2 minutes.

The third level (in orange and yellow in the figure 9) consists of four monorail or Bus Rapid Transit lines, two per module. These guarantee the completion of the primary network, reaching the edges of the built-up urban areas and thereby impeding marginalisation. The choice between one system or another depends on the shape of the city that will be configured. The more it's marked by the traditional urban installations, the more likely the BRT system will be chosen. The more the city is marked by high buildings surrounded by greenery, the more likely a Monorail system will be chosen. The headway of the service should be around every 2 minutes.

The fourth level, which is charged with the capillary distribution of movement in the proximity of departure and arrival points (origins and destinations, in specialist language) consists of 36 ecological bus lines, 2 per block, which cover their respective blocks in a sinusoidal pattern both longitudinally and latitudinally. Buses will run in restricted bus lanes, totally separated from private traffic, and will benefit from a system of privilege at intersections, where the regular grid will enable a simple programming of the "green wave". The grid used by buses will be exactly equal to half of the available grid, leaving ample space to private mobility. No one bus stop on this capillary distribution system will be farther than 150 metres from urban settlements and every journey inside a single block will require, at most, one interchange and a very few waiting time. In fact, the service will have a headway of one bus every 2 minutes and, thanks to bus lanes and privileges in intersections, maximum reliability and regularity.

And finally, the individual systems, both public and private, come into play (figure 10). Any city, even if characterized by a predominance of collective transport systems, cannot divorce itself entirely from individual mobility. Individual mobility integrates into and completes major transport lines. Also for relations with that portion of the territory that cannot be effectively served, it represents an alternative. In an urban environment, this modality of transport will nevertheless assume a completely different configuration than that which has been known until now.

If, in contemporary cities, the dominant presence of the car is a constant, in Khrónopolis®, individual mobility will be ensured by eco-systems, both owned and shared. Electric car is an idea largely discussed in the World. Vehicle manufacturers have initiated research programs increasingly intense and city administrators are pinning great hopes on this new technology. I believe that having vehicles which reduce emissions to a minimum represents a huge step forward to reduce air and noise pollution in the cities. Of course, a simple substitution of thermal powered vehicles with electric propulsion vehicles is not able to improve the fluidity of traffic and, therefore, does not allow us to save some of the time we use for our daily trips. Only a new vision of urban mobility can radically change the conditions of use of existing cities and provide valuable hints about the new towns or the expansion of the existing ones, allowing the harmonic alternation between dense and light cities.

This new vision is founded on four premises:
• Citizens aspire to door to door trips;
• For public transport, the difficulties lie in covering the first and last mile;
• Besides 'collective', public transport can be 'individual';
• The 'individual' and 'collective' means of transport must be integrated and not in competition.

Matching Macro and Micro Mobility is the key to giving life to a real and true Renaissance of Urban Mobility.
Macro Mobility enables mass movement and is guaranteed by rail lines, underground lines, tramways and Bus Rapid Transit (BRT). Macro Mobility also guarantees orbital relations, connecting the existing external nuclei, today forced to commute into the heart of the city under an almost constant mono-centric structure. In proximity to the stations, dense nuclei will be consolidated so as to become motors of the valorisation process for new urban centralities, including big parks. Alone, Macro Mobility is not enough: it becomes necessary to expand the territory served, to offer genuine alternatives to those who today are forced to use private vehicles in order to reach destinations far from public transport stops.

Micro Mobility fills this gap, both in theory and practice. In parallel with public transport stops, are born the Eco-Stations, where the traveller finds means of transport for hire: bicycles and new generation electric vehicles. Public means of individual transport, capable of guaranteeing the cover of that last mile, not in a literal sense, but expanded to any space that can be covered in about 10 minutes.

The capillary diffusion of the Eco-Stations also allows the covering of the traveller's first mile which characterizes the initial phase of any journey. Starting from the Macro Mobility station, the capillary network, which runs through the territory beyond walking distance, is developed.
Rome, Milan, Paris, London, Madrid or New York, just to give a few examples, could require a few thousand of eco stations located around the Macro stations and sprawled inside the territory according to a serious analysis of transport demand. The construction of a thousand eco stations would cost as much as two kilometres of heavy subway and would eliminate 300,000 car journeys every day.

For those who don't want to, or can't use Micro Mobility, several bus routes are planned, served by electric microbuses capable of covering, like the pieces of a puzzle, the same territory covered by individual transport. Today, these systems are of the traditional type, but in the near future they could be totally automated and activated on call, as happened in south of France during an experimental application and as happens by the line currently in use in Rotterdam.

Fabio Casiroli
Politecnico di Milano, Italy

The union of Micro and Macro mobility offers the best chance to virtuously transform the urban fabric. It offers opportunities capable of valorising peripheral areas, often characterised by economic or social hardship. This is the context where the compact electric vehicles fulfil their real potential and contribution to capillary and ecological mobility.

The typical structure of large metropolis presents elevated density levels in central areas, which go down progressively moving towards the suburbs. Macro and Micro mobility produce a radical transformation of the forma urbis, which assumes a clear, multi-polar structure, harmonically broken up by green spaces. Thereby consolidating relations of proximity capable of generating more contained journeys, of a more 'neighbourly' nature, served by 'sweeter' means of transport.

The results obtained using Micro Mobility are amazing. Walking for 15 minutes in many megalopolis once having abandoned the public transport rarely allows anyone to get to work, sport, cultural or leisure venues. However, the integration with Micro Mobility opens new horizons and a city of a greater magnitude than the previous is born. Offering solutions of this nature in the city can give life to a real and true Mobility Renaissance.

Bibliography

Braudel F., Civiltà e imperi del Mediterraneo nella età di Filippo II, 1953 Einaudi

Carcopino J., La Vie quotidienne à Rome à l'apogée de l'Empire, 1939 Librairie Hachette

Castells M., La città delle reti, 2004 Marsilio

D'Angiolini L.S., Alcune questioni della prassi urbanistica, 1967 Edizioni l'Aretina

De Solà-Morales I., Costa X., Metrópolis, 2004 Editorial Gustavo Gili

Department of Economics and Social Affairs, Population Division, Population, Environment and Development - The Concise Report, 2001 United Nations

George P., Précis de géographie urbaine, 1961 Presses Universitaires de France

Goodman P., Goordman P., Banning Cars from Manhattan, 1961 Dissent

Hall P., The world cities, 1966 World University Library

Hall P., Cities of tomorrow, 1988 Blackwell Publishing

Jacobs J., The Death and Life of Great American Cities, 1961 Random House

Kenworthy J., Laube F., The Millennium Cities, Database for sustainable Transport, 2001 UITP Editions

Lavedan P., Histoire de l'Urbanisme, 1952 Henri Laurens Éditeur

Mittner D., La città reticolare e il progetto moderno, 2008 Città Studi Edizioni

Rykwert J., The Seduction of Place. The History and Future of the City, 2000 Pantheon Books

Samonà G., L'urbanistica e l'avvenire della città negli Stati europei, 1959 Editori Laterza

Sassen S., The Global City. New York, London, Tokyo, 1991 Princeton University Press

Shafer A., Victor D.G., The future mobility of the world population, 2000 MIT

Sitte C., Der Städte-Bau nach seinen Künstlerischen Grundsätzen, 1980 Jaca Book

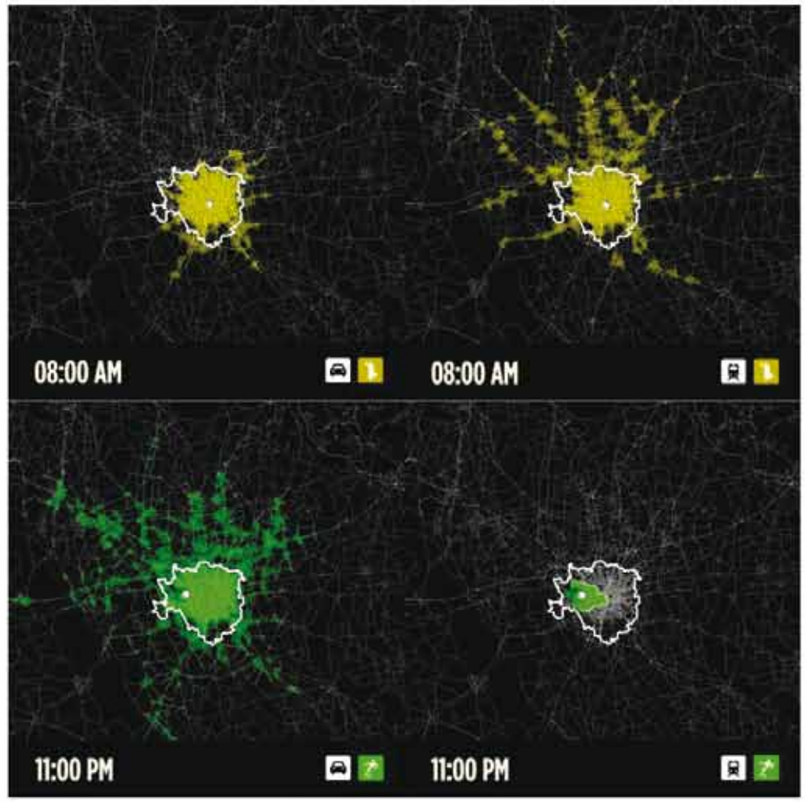
Smailes A., The geography of towns, 1962 Hutchinsons University Library

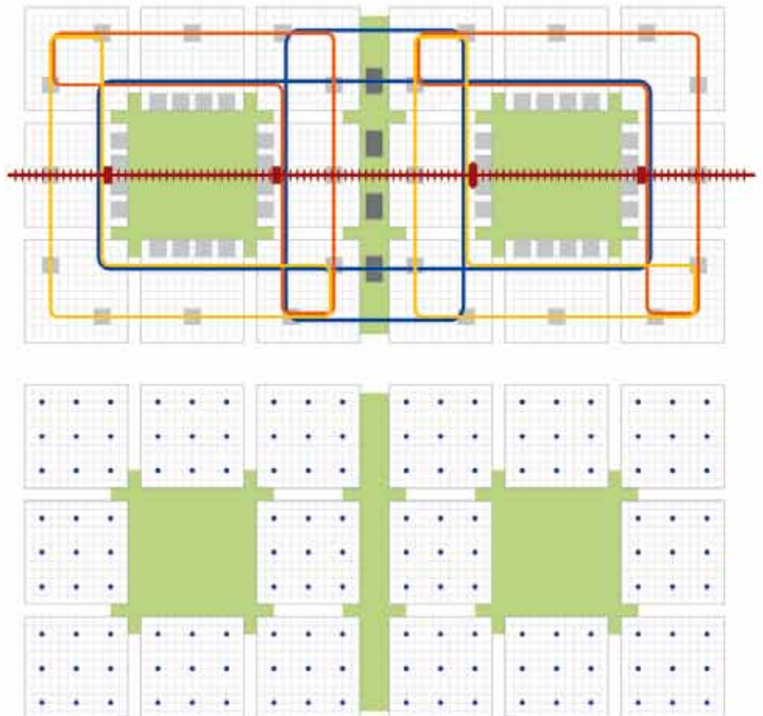
Taylor S., The moving metropolis, 2001 Laurence King Publishing

United Nations, World Urbanization Prospects, 2005 UN Editions

Vercelloni V., Atlante storico dell'idea europea della città ideale, 1994 Jaca Book

Vivier J., Mobility in Cities, Database, 2005 UITP Editions





Chen Zhen
Politecnico di Milano, Italy

Railway Station between Architecture and City. Western Models, Chinese Cases and Urban Transformation[1]

1. Introduction

The architecture of the station is now in China a “dominant theme” in the meaning that Hans Sedlmayr has given the term in its Verlust der mitte (1951).
On the one hand, this role played by the railway station depends on the tremendous figures of the national rail network reconstruction of the Republic of China in the last decade: 804 new high speed railway stations realized during the year 2002-2012; about 9,676 km of routes in service on June 2011 , that will reach 13,000km by the end of 2012, connecting the major centers of the country, from Hong Kong to Beijing and Harbin, from Kunming to Shanghai, etc. In that moment it is expected to have more high-speed railway track than in all the rest of the world .
On the other hand, the high-speed railways in China has the role of an underground connecting the main centers in the mega agglomeration of the Pearl river delta (Guangzhou, Shenzhen, Hong Kong), Yangtze river delta (Shanghai, Nanjing, Suzhou), and Beijing-Tianjin metropolis area.

These two concurring features gave rise to a revolution of an architectural type – the passenger railway station - which has maintained a some figurative and typological stability over a long period, as wit-nessed in the annotated examples reported by Carroll L. V. Meeks in The Railroad Station. An Archi-tectural History (1956).

Indeed, if we refer to the Peter G. Rowe’s vision of the urbanism phenomenon in East Asia in his book East Asia Modern: Shaping the Contemporary City (2005), the passenger railway station is one of the symbols of the new kind of contemporary city listed in his overview (Singapore, Hong Kong, Shanghai, Taipei, Beijing, Seoul, Tokyo). At the moment in China the new generation of passenger railway sta-tions is the most inventive theme in comparison with others architectural types like skyscrapers that characterized the new kind of contemporary city shaped by Rowe.

According to the perspective given by Rowe, these samples cities share some common features in their recent historical development in the last two centuries. One of these is colonialism, or better say the presence of foreign enterprises and techniques in the construction of railway networks.
Considering the architectural forms of the Chinese railway stations in the past century we have to no-tice that they are not that different from those made simultaneously in Europe and the U.S. considered by Meeks. In many cases they are just copies of the different national prototypes of the foreign railway companies: the British colonialist stations in Shanghai and Beijing reflecting the Victorian eclecticism models in India; the Japanese stations in Manchuria reflecting the “Tatsuno Kingo” style in Japan and in the colonies (Taiwan, Korea); the German stations in Shandong Province as architectural transfer of the Metz and Aachen stations; the Russian stations of the Chinese Eastern Railways in Manchuria as ideal mirror of the Art Nouveau stations of Moscow and on the Tran-Siberian line; the Shenyang station by the Chinese architect Yang Tingbao educated in Pennsylvania University reflecting the contemporary Art Deco samples in the US.

But if we look to the context where these stations are located, the colonial city, and we analyze the role of the station building in the urban frame the perspective immediately change.
By following the recent theoretical overview on colonialism by Jurgen Osterhammel in his book Kolo-nialismus: Geschichte, Formen, Folgen (1995), we can appreciate how the railway station building in the colonial situation give rise to different phenomena to those occurred in the European and US cities. The railway station in the colonized China was indeed a tool of economic exploitation and military con-trol, nevertheless represented a vehicle of an imposed modernization of the country and of course a facility improving the connections between cities and regions and city and countryside. The combina-tion of these features determinates original and unique situations in the city shape – both in the old Chinese cities and in the colonial cities of new foundation.

Because of all these historical phenomena the station established in China a particular link with the idea of power. In the following short review of historical and recent cases we will try to clear up this point and show how the link with the idea of social and political power gave rise to some specific situa-tions in the urban shape - both in terms of negative relation as in terms of positive relation and, in re-cent times, in terms of negation of this link with the image of the railway station and power.

2. Colonial power and National power reflected in the Chinese railways stations during the XX century.

Stations in Manchuria

Before the military occupation in 1931 Japanese colonized Manchuria by realizing a railway network (South Manchuria Railways) in 1907 and by founding new cities both in new locations as well as in correspondence with already existing old Chinese cities. In both cases these new cities reflected a similar model based on a rectangular area with the longest side parallel to the railway line, divided in regular blocks by a network of orthogonal roads, crossed by three main avenue (a trident) originated by the rectangular station square with other two big plazas (usually circular) in the diagonal axes.

In the case of Shenyang (Mukden) the new city was nearly two kilometers far from the old Chinese walled city (former capital of Qing dynasty). Factories, residential district and all the facilities were di-stributed in the blocks of the grid while main offices, administration buildings and hotels were located in the station square (rectangular) and in the other two “circus”. The station, designed in 1908 by the Japanese architects Yasushi Tatakeshi and Soutarou Yoshida, was located exactly in correspondence of the central main axis of the trident; it had a long rectangular plan and was two stories hight; a dome set in the middle, visible from all the avenues of the trident, with circular windows was giving light to the concourse. The architecture of the building was resembling the image of a baroque central european palace with motives of “Queen Anne” style.

In the case of Changchun (Hsinking), the new city was presenting an urban plan following the scheme of Shenyang with the station occupying the same position. In this case the railway station resembled the image of a neoclassical palace with a white colonnade in the front.

In the case of Dalian, the former Dalnij founded by the Russians in 1899, the Japanese district was added some years later than the other two cities, in 1919 when the lots of the Russian plan were com-pletely fulfilled with buildings. The railway station, design by the Japanese architect Tada Sotaro was completely rebuilt in 1935 a barycentric position between the Russian city and the new Japanese city, whose plan was similar in the general concept to the planning model adopted in Manchuria but adapted to the coastal location. The Dalian station, the most expensive building ever realized by the Japanese in Manchuria , is a functionalist building with two ramps siding the rectangular station square to help the arrival floor located at the second level.
The railway Stations of Shenyang and Changchun look like a sort of “governor palace” while the huge building of Dalian railway Station is like a display of muscles, showing the power of technology.

Beijing first central station

The first railway terminal formed by two stations in Beijing was realized at each side of the Zhengy-angmen barbican during 1900s. The west station built by French which leading the railway to Wuhan, was not so interesting in terms of style and had not an aspect of a real station. While the east station, made by a British railway construction team which charged by British engineer Claude William Kinder (1852-1936), leading the railway to Tianjin and later extended to Shenyang and Shanghai, was quite expressive and a symbolic image of railway in Beijing. It had a rectangular plan, the central concourse and ancillary offices around it. The whole architecture was in Queen Anne Style with a simplified large vault and a tall bell tower, making the building became a symbol of this area.

The station used the urban wall as a background. On the other side of the railway is the legation quarter found by the Eight-nation Alliance. The two stations were like pliers to control the city’s main entrance - the defense castle combined by the barbican of city gate and arrow tower.

The problem came out that how to re-organize this area for a better relation and vision of this entrance area. These gates, belongs to the imperial system of planning, defense and etiquette, had been for-bidden to foreign visitors for many centuries until the Anglo-French force entered Beijing in 1860.

In 1915, German architect Curt Rothkegel (1876–1946), realized his project to demolish the original barbican walls and transform it as a square in which the space was defined by the city gates, arrow tower and two stations.

The foreign force even created a private path in order to guarantee the possible way to escape from their legation quarter to the station. This idea did not only consider the short way to take train, but also like a sort of siege of a fortress of Beijing. During the first invasion by the Anglo-French force in 1860, they occupied the legation quarter to build offices, residence and barracks to station troops. The quar-ter was inside the Beijing city and under the control of the city. In such crowded area they could not move and redeploy easily, thus one of the reasons why they created the direct link to the station as a way to escape remembering what the boxers did during the year 1900. This castle logic referred to many European medieval castles, located in the middle of city, dominating the main public square, connecting with bridge crossing the city to the citadel to protect the escape of the authority.

We can characterize the image of the station as a sort of siege of the fortress of Beijing – the station attached the wall, seemed to be intended or take the role of war machine. This produced a dialogue together between one side - the railways as the machine of the besieger, and the other side, the city gates and walls representing the city and the central authority of China.

Nanjing station of Capital plan

In 1929, after the funeral ceremony of Pater Patriae Sun Yat-sen and the completeness of his Mauso-leum, the proposal of American architect Henry Killam Murphy (1877-1954) and Sun Ke (son of Sun Yat-sen) in Capital plan of Nanjing was to design the Central Administrative District with a Chinese planning style, to the south of Sun Yat-sen Mausoleum and Ming tombs, along the middle axis between the two complex, in order to show the party and the country inherited the legacies of Sun Yat-sen.

The idea can be compared with the master plan of New Delhi made by Edwin Lutyens, while at the end of central axis of the Central administrative District instead of parliament house, Murphy put the central station complex that formed by three adaptive buildings with Chinese Big Roof: in the middle was the central station, aside of it were post bureau and railway administration.

Railway lines extended from this central station of Nanjing, even of the whole country, to the rest of China to follow the first national railway project made by Sun Yat-sen.
Character of the station complex was like imperial palace, or monumental mausoleum, as one of a series of adaptive buildings extended to the Ming tomb and Sun Yat-sen Mausoleum. Its Chinese Big Roof, maybe was one of the first samples applied on railway station, although was just a sketch of project but had a long time influence: some stations, like Hangzhou, built up later with big roof.
The vision of the plan, including the architecture of station and all the other Chinese adaptive buildings in the district, demonstrated a strong will and proudness for the first Chinese republic country which replaced the feudal regime that humiliated by defeat in the last 100 years.

Beijing Central station of PRC

The new Beijing Central Station was located on the other side of former legation quarter, while the strategy of its location was total changed.
In early 1950s, the city removed the siege: destroyed the urban walls which represented power, and moved the legations out from the ancient city to new embassy area. The former central station and the station square was transformed as one of the part of complex of Tiananmen Square which formed by the Tiananmen gate, the Great Hall of the People, the National Museum, the Monument to the People’s Heroes, the Mao Mausoleum, and the Zhengyangmen city gates.
In the mean time, after some debate that how to build new administrative facilities, the government decided to create a new Chang’an Avenue as the west-east axis and objectively break and dilute the imperial symbol of the ancient north-south axis. Along this avenue the most important government, conference, museum, cultural buildings were built. Its official status has been reinforced many times by the parades of anniversary national day.

Located like the east end of the avenue, with a short link connected it, the new Central station was designed by Yang Tingbao (1901-1982) and Chen Dengao (1916-1999), and belongs to the Top 10 buildings for the 10 years anniversary ceremony of the foundation of People’s Republic of China.
The station consisted a central concourse with the facade formed by three large arched windows and porch, with two clock towers and two small towers in each wing.
The project, as for some other buildings realized in 1950s, followed the influence of the soviet experi-ence of the redesign of station like palace.

This image of the station as “people’s palace” was to celebrate the people’s country, and display the new power of “People”. From the architectural prototype of Beijing station then such “official socialistic architecture” have been generated for many stations in the nation. In some cities like Taiyuan, Changsha, etc., also the urban layout to organize the station and the city – station as one end of the most important boulevard, was base on the benchmark of Beijing. This idea survived utile1990s in the case of Beijing west station.

3. The station is not station anymore. Between the station and the future.

We consider here some new HSR (High Speed Railway) stations in Chinese megacities of the 21 century show, in Pearl River Delta and Beijing-Tianjin Megalopolis, where high speed is used to connect cities - almost like a fast subway. The critical observation of these stations is their belonging network rather than their location in the city. In these examples we can recognize how the traditional features that describe the architecture of railway station had been radically reviewed. These are: the station square, the roof, the facade, and the concourse.

The station square

As a classic element, the station square now in some cases is disappeared.
In Hong Kong case, the station is transformed as part of a civic center where the square is included inside the building, mimetized with a part of an artificial hill facing the hills of Hong Kong Island. The station has a double activity on cultural and facility since it integrates with the West Kowloon Cultural District.
The case of Yujiabao displayed another image. The station square was hidden, as a concourse under a dome, outside of that is the park of CBD with skyscrapers surrounded.
While the square of Shenzhen Central station is disappeared totally. As the first underground HSR station in China, it integrates with also the facilities of civic square of Shenzhen.

The roof

In the recent HSR stations the roof emerged to be the dominate feature because its low but huge volume.
The roof and body of the Beijing South station are combined to form a pure geometric shape that reminds us the image of a flying disc. The roof of Guangzhou south station and Shenzhen north

Chen Zhen
Politecnico di Milano, Italy

station is so huge that makes the stations a symbolic character. While roof can be also omitted. Obviously Shenzhen Central station is totally sunk down and has no roof can be recognized as a station, while the Yujiabao station has a transparent glass dome - as a roof in order to introduce the sunshine and view of sky into the station, made the image as a warm house in a botanical garden.
The Hong Kong station has a semi transparent roof, but the roof is also as the public space that people can walk on it and visit the landscape.

The facade

The same change comes to the facade. Different from the idea of old stations in the last two centuries which characterized by the main facade to the city, nowadays the facade disappeared: remains an irregular roof, or a curve (convex or concave) shape equally to all the directions. Although there are still some stations have a “main facade” while the significance of the facade is much reduced because of the technical problems – as the same reason of the emergence of the importance of the roof, it is very different to make a facade with such low but huge volume. Consequently the facade degrades to be a glass trip to assure the natural light for the station.

The concourse/bridge

Some concourse of nowadays HSR stations are extended to cross all the rail tracks, and functionally combined with waiting rooms as a big gallery with seats, corridors, and elevators. Their shape can be regular geometric, irregular with undulating shape, while all these huge space displayed the advanced technology of architectural structure.
Conceptually the concourse is not anymore the station concourse, but the bridge to connect two parts of city. In the case of Shenzhen North station, the concourse acts as a transparent bridge to link the new station city to the natural park. While in Tianjin cases, both the west and central station, the concourse connected the two urban areas to be innovated as new business district.

The conclusion

Considering that the relationship between station and power is one of the features of the traditional Chinese railway stations, then in the recent cases this idea is almost lost - the station is not any more the symbol of power. In this sense, the station is not station any more, but becomes a tool of transport, and the space to be used as public functions, like shopping, civic square, and park.

Figure 1. Beijing Central station of P.R.C. Architect: Yang Tingbao, Chen Dengao. 1959

Figure 2. Shenyang (West/Japanese) station. Architect: (Japanese) Yasushi Tatakeshi, Soutarou Yoshida, 1908

Figure 3. Beijing first central (Zhengyangmen east) station. Team manager: (British engineer) Claude William Kinder. 1906

Figure 4. Project of Nanjing Central station. Architect: (American) Henry Killam Murphy. 1929

Figure 5. Shenzhen North station. Architect: The institute of Architecture Design & Research, Shenzhen University.2011

Figure 6. Beijing South station. Architect: Terry Farrell & Partners. 2008

Figure 7. Guangzhou South station. Architect: Terry Farrell & Partners. 2010

Figure 8. Tianjin West station. Architect: GMP. 2011

Figure 9. Wuhan station. Architect: AREP. 2009

Figure 10. Yujiapu station. Architect: SOM. 2013

Figure 11. West Kowloon Terminus (Hong Kong HSR station). Architect: Aedas. 2015

Bibliography

1. Hans Sedlmayr, Art in Crisis: the Lost Center, New Brunswick, New Jersey, 2006.

2. Carroll L. V. Meeks, The Railroad Station. An Architectural History, Yale University Press, New Ha-ven, 1956.

3. Jurgen Osterhammel, Colonialism: A Theoretical Overview, Markus Wiener Pub, New Jersey, 2005.

4. Peter G. Rowe, East Asia Modern: Shaping the Contemporary City, Reaktion Books, London, 2005.

5. Akira KOSHIZAWA, translated by Huang Shyh-Meng, History of urban planning in Manchuria, Dajia publishing house, Taipei, 1986.

6. Technical office of Capital plan, capital plan (1929), Nanjing publishing house, Nanjing, 2006

7. Jeffrey W. Cody, Building in China: Henry K. Murphy’s “Adaptive Architecture”, 1914-1935. Chinese University Press. HONG KONG, 2001.

8. Han Dongqing, Zhang Tong (editor), Selected architectural works of Yang Tingbao, China Architec-ture & Building Press, Beijing, 2001.

9. Zheng Jian (Chief editor), Design Collection of Railway Station, Vol.1-7, China Railway Publishing House, Beijing, 2006-2009.

Sara Glee Queen
North Carolina State University , NC, US

Regional Infrastructures

Abstract
The modes of production and frameworks for exchange which organize and structure our contemporary cities have national and international extents, yet they also have local physical, social, and environmental impacts where they meet the ground. Roads, highways, railroads, airport facilities, electric lines, gas lines, data centers, power plants, water lines, reservoirs, waste treatment facilities- these are a few of the diverse infrastructural systems which mark our landscape. Each is built according to an independent logic to maximize efficiency within specific terrain and to negotiate co-existing social, environmental, and legal systems. Traditionally these infrastructural technologies have been the domain of engineers and public safety officials which has led to the implementation of closed systems that deny possible synergies with other networks or even public space. This contemporary reality and opportunity for alternative practice is the foundation for this research-based course which questions how infrastructural systems might be opened up to other, more expansive agendas in order to catalyze a set of dynamics that engage environmental, social, economic, and political systems.

As a graduate-level seminar within the College of Design at North Carolina State University this course analyzes the contemporary networked metropolis, using as its subject the urban Triangle Region of central North Carolina. Like many growing urban zones in America, the Triangle's population is rapidly increasing and the once independent cities of Raleigh, Durham, and Chapel Hill are quickly merging into one urbanized region. Through mapping methodologies students in landscape architecture and architecture tap into the flows that both sustain and are generated by this emergent urban condition in order to uncover and describe the region's networks and infrastructures on their own terms and speculate opportunities to recalibrate the components of these systems to more productive and dynamic ends. Ultimately arriving at a discussion of: Why do we as designers endeavor to do research on the city? What does this research produce and how does it inform the physical practices of architecture and landscape architecture? What are the political dimensions of urban research and to what extent can such practices reach beyond our own disciplines to address larger issues?

Sara Queen
Regional Infrastructures
"If there is to be a "new urbanism" it will not be based on the twin fantasies of order and omnipotence; it will be the staging of uncertainty; it will no longer be concerned with the arrangement of more or less permanent objects but with the irrigation of territories with potential ... discovering unnameable hybrids; it will no longer be obsessed with the city but with the manipulation of infrastructure for endless intensifications and diversifications, shortcuts and redistributions" Rem Koolhaas

By 2008, the majority of the world's population had shifted from rural areas to urban areas and it is estimated by 2050 that 70% of the world's population will be urban dwellers (Birch et al., 2011). These numbers illustrate how rapidly urban populations are exploding across the globe and point to a fundamental shift in planning mentalities as we transition to urban-centric economic, social, and environmental policy models. It is at this very moment when urban regions are dominating and transforming our environment that we are seeing "the paradox that Urbanism, as a profession, has disappeared" (Koolhaas, 1995). With this erosion of the unified voice that Urbanism has maintained for the second half of the 20th century, we find a multitude of manifestos which explore infrastructural models for sustaining this radically new scale. From the established traditions of Architecture and Landscape Architecture to the emerging synthetic disciplines of Landscape Urbanism and Landscape Infrastructure, each group is scrambling to claim the appropriate skills and tools to be effective in the challenges facing the contemporary city. As a graduate-level seminar within the College of Design at North Carolina State University Regional Infrastructures introduces students to these rapid transformations of the contemporary networked metropolis and questions the designer's role in intervention through infrastructural systems. Through mapping as a research process and the map as a visualization tool students document the flows that both sustain and are generated by dynamic urban conditions in order to uncover and describe the region's infrastructural networks on their own terms.

Triangle Region NC
As a result of unprecedented urban population growth, we are witnessing rapid shifts in the pattern and form of our urbanized zones from the mono-centric dense metropolis to poly-centric mega-city regions (Hall et al., 2006). Like many growing urban areas in North America and Europe, the Triangle Region of central North Carolina is rapidly increasing in population and the once independent cities of Raleigh, Durham, and Chapel Hill are quickly merging. At a scale further removed, the larger urban region termed the Crescent can be seen comprised of Raleigh, Durham, Chapel Hill, Burlington, Greensboro, Winston-Salem, and Charlotte. While this region occupies a minority of the state's land area, it is home to over 6 million representing approximately 65% of the state's population. As the agricultural and manufacturing economies in the state continue to decline the population imbalance of the Crescent region in relation the rest of the state is expected to increase. At yet another scale removed, the Crescent can be seen as part of the Piedmont Atlantic Mega-region which spans from Birmingham AL to Raleigh NC and additionally contains Atlanta, Nashville, Greenville, and Spartanburg along with hundreds of other small cities and towns. The Piedmont Atlantic Mega-region is home to over 12% of the US population and is expected to be one of the fastest growing regions in the nation.

In 1961, Jean Gottmann first identified this emergent pattern of urban mega-regions in his publication "Megalopolis: The Urbanized Northeastern Seaboard of the United States". He illuminated how the Northeastern United States was functioning as a region or network of towns and cities, new and old, rather than as independent cities. Building on this emergent phenomenon the Greek Architect Doxiadis proposed the future form of the United States as a single dispersed American City continuous along the railways and interstate highways while preserving pockets of productive farm land and national parks within the network. Since the 1960s, urban regions or megalopoli have been identified across the globe charteristicly networked by the "dense flows of people and information carried along motorways, high-speed rail lines and telecommunication cables." (Hall et al., 2006) The identification and planning for this radically new scale and form of urbanism requires city designers to consider new units or components of the city that can accommodate the specificity of the micro-site scale while offering the flexibility and resiliency required at the macro-system scale.

Throughout the US and Europe we are also witnessing how shifts in the economy are retooling the urban environment towards global service industries, especially in terms of the advanced information-based productions of finance and business services, government, creative and cultural industries, and tourism (Sassen, 2001). In the central region of NC we can find concentrations of each of these advanced economic functions: Charlotte as the financial and banking center of the Southeastern United States, Raleigh as the state's capital, and the Triangle as home to three of the nation's leading universities and 16 other smaller universities and colleges. This process of informationalization, coined by Manuel Castells in 1989, is the shift in advanced economies away from manufacturing and goods-handling and towards service and information-based production. The effects of this economic transition were recognized as early as the late 1940s in the post-war landscapes of Western Europe and the US. It is predicted that in the coming decades this transition will be as dramatic in effect on our landscape as the transition from an agrarian to industrial economy which accrued across the 18th, 19th, and early 20th centuries. Today, according to Pierre Belanger, "economy is now inseparable from the environment, and so are modes of production" (Belanger, 2009) emphasizing that the form of our cities can no longer be studied or planned for without an indepth understanding of the processes and modes of production which sustain them.
Key components of an advanced information-based economy are concentrated centers of knowledge-intensive services and specialty consultancies which are globally networked (Hall et al., 2006). At the heart of the Triangle Region in North Carolina is one of the United States' most notable advanced service clusters: Research Triangle Park. RTP was conceived of in the 1950s as the world's first Research Park situated to take advantage of the existing transportation infrastructure of I-85, I-40, and RDU International Airport as well as the intellectual and educational infrastructure of Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University. The entrepreneurs and law makers who backed the project found an opportunity in the local rural-based economy which had a median annual income of $1,049, one of the lowest in the nation, and successfully petitioned for large state and local incentives to buy the land, attract investors, and build the park. Today, RTP remains unincorporated and state law prohibits the surrounding municipalities from annexing it for property taxes on this now very valuable land. Today there are more than 170 companies supporting over 38,000 full-time employees with an estimated 10,000 contract workers and thousands of additional service support jobs in the surrounding region. Prior to the development of RTP, the three major cities of the Triangle Region maintained distinct boundaries and identities with the majority of residents living and working within their same city. In 1950, Raleigh was the political capital of 65,679, Durham was the tobacco-based industrial city of 71,311, and Chapel Hill was a quaint university town of 9,177. With RTP at the geographic center of the Triangle, the historical boundaries and physically identities of these historic cities have eroded. Today the population of two million lives, works, studies, and plays throughout the region commuting across municipal and county boundaries daily.

Additional attributes of information-based economies identified in the US and Europe are proximity-based concentration patterns. Mega-regions whose primary economic activities are information-based services rely on consultants and clients to live/work within a two hour travel time from the identified cores to accommodate face to face collaboration in addition to mediated digital transactions. Dutch planners have termed this pattern as concentrated de-concentration through their study of the Randstad Region. Here, defining the spatial extents of this two-hour boundary relies on peoples' ability to move within the area, often transcending political or geophysical boundaries. As urban regions become more networked with diverse modes of high speed transportation, this two hour radius can expand and warp to encompass larger and larger territories which take on poly-centric structures.

Poly-centricity is both the cause and effect of increasingly networked infrastructures which facilitate the stocks and flows of energy, people, food, water, and other resources. The radical effects of movement infrastructures are undeniable in the United States where the interstate highway system has profoundly transformed the landscape. In order to sustain service-based economies over a large urban region, diverse transportation and exchange networks are essential, preferencing poly-centric forms with multi-modal interchanges over earlier concentric or linear urban forms which developed in response to singular modes of transport. Due to their reliance on multi-modal transportation these emerging urban forms concentrate in zones around publicly accessible transit stations rather than forming continuous densities. Currently the lack of transportation diversity is the major limiting factor impacting unsustainable growth patterns in the Triangle. While each major city does have a municipal transit bus-based system, ridership is low and the systems do not interface well with others perpetuating the Triangle's dependency on private automobiles.

The discrepancy in municipal boundaries and the functioning urban area boundaries begs for reconsideration of the scales at which we design, fund, and execute our infrastructural networks. Often our sustaining infrastructural systems are planned, built, and maintained by singular municipalities due to funding structures and tax bases. This bureaucratic structure inherently isolates the development of essential infrastructures such as water, sewer, and transit from the responsibility and liability of how to interface with surrounding municipalities. Additionally, the administrative structure of public utilities contributes to isolation even within a single municipal government in terms of how different departments speculate on the opportunities to recalibrate the components of their specific delivery systems. A successful Triangle-based example of how infrastructure coupling beyond departmental boundaries can serve more expansive agendas is the elaborate network of green-ways which run along sewer easements and abandoned rail lines connecting civic destination, museums, recreational spaces, universities, and residential neighborhoods.

In addition to the physical settlement patterns as an urban boundary, there are alternative ecologies and systems which increasingly are being considered as regional planning and political boundaries such as watersheds. There are also the more abstract farther reaching extents of energy sheds, food sheds, and waste sheds which are important in understanding the nature of urban regions and their sustainability. These resource sheds and dynamic extents suggest a radically different urban boundary type at both the regional and global scale. Therefore the functional extents of a mega-city region might more accurately be based on Castells's space of flows and bound by the infrastructural networks which facility their processes.

This contemporary reality and understanding of the complex political, economic, social, and environmental forces precipitating urban regions is the foundation for this research-based course. Through individual research projects on existing infrastructural systems students question how these systems might be opened up to other more expansive agendas. Infrastructural thinking offers models for intervening which above all are pragmatic in order to accommodate the irregularities of terrain and temporal fluctuations. Through a catalog of specific strategies as opposed to top-down master plan approaches, infrastructural-systems thinking begins by researching the specifics of a condition without a preconceived formal end. In other words, infrastructural thinking is "both open and anticipatory" (Allen, 1999). This approach challenges us as designers not to conceive the city as a collection of architectural objects but as a networked field of ecologies: "a mega-form synthesizing landscape, infrastructure, and architecture" (Allen, 2010).

Method: Mapping as Research
Through mapping methodologies students in landscape architecture and architecture tap into the flows that both sustain and are generated by the Triangle's urban condition. Through the course, students are expected to transform cartographic conventions and informational graphics to uncover and describe the region's infrastructural networks on their own terms and speculate on opportunities to recalibrate the components of these systems to more productive and dynamic ends. Rather than advocating formal and object-based solutions to the challenges affecting our contemporary cities, mapping as a research methodology offers alternative approaches and perspectives for understanding urban territories and the networked ecologies that sustain them. Mapping becomes less concerned with isolated forms and more with the processes that precipitate and affect those forms. In other words, students are using mapping as a propositional and opportunistic tool building on James Corner's assertion that "in describing and visualizing otherwise hidden facts, maps set the stage for future work. Mapping is always already a project in the making." (Corner, 2011)

The vehicle project for this semester-long investigation asks each student to focus on one infrastructural system facilitating the resources of food, water, energy, or people that sustain the urban region. By consulting a wide body of resources from construction details to administration bylaws, students delineate the terms of measurement and regulation which define the system and its processes. As introduced in the section above infrastructure must be studied at many scales in order to adequately understand how it is deployed within the landscape, interconnects with other systems, and to understand its true extents as regional, national, multi-national, and even global systems. In addition to measures of geographic space, temporal dimensions and frequency of fluctuation are also essential in defining the processes facilitated by infrastructural systems. By its nature, infrastructure is primarily static but designed to accommodate variability in speed of movement and quantity of flow which can be linear or cyclical in its frequency. In order to accommodate and regulate these dynamic shifts, infrastructural systems have limiting mechanisms which may take the form of physical values, regulatory policies, or even economic feedback

mechanisms. Additionally the students are responsible for understanding the physical components of the system, where it hits the ground and how it interacts with the surrounding social and biological ecologies.

Ultimately, through synthesizing and visualizing the parameters of their system and its process, students identify where the opportunities are for their system to be coupled with additional infrastructures, public space, or other productive mechanisms in the surrounding urban network. In the following mapping case studies, students provide an overview of the system they are studying and identify where architects might intervene to re-tool and re-orient the system to catalyze a set of dynamics that engage environmental, social, cultural, economic, and political systems.

Transportation Network
Student Project by Emily Rudkin
The transportation network of the Triangle is both a cause and effect of population densities and distributions. The interconnected nature of the Triangle via the complex network of highways, interstates, and local roads has spawned dispersed settlement patterns. Despite continued growth the relative density of people continues to decline, illuminating that the majority of population growth has taken place outside city boundaries (figure 1). These car-dependent suburban settlement patterns have been facilitated by the road network and in turn the population imbalance continues to fuel more ring road construction around cities (figure 2). In addition to private vehicles, the Triangle has seven bus systems which offer the only form of public transportation in the region. The bus routes are determined by potential ridership primarily in relation to employment, high-density residential and low-income neighborhoods as well as retail, commercial, and cultural sites. Due to the cultural perception of the bus, the limited extents of its route, and the time it take to get from point A to point B only 2% of commuters even use the bus. While a light rail is proposed for completion by 2025, the current dispersed residential and employment patterns will not make it a viable option as a stand-alone system, instead the majority of riders will need to commute to stations.

Through an in-depth study of the requirements and influences of the railroads, road, bus, greenway, and proposed light rail networks this project identified deficiencies in access, connectivity, and hybridity between the transportation networks and the communities they are serving (figure 3). By looking at the region through cross sections (figure 4), one can see the variations in employment and population densities and how they relate to the location of different transit routes and development types. It is within these sections where one can identify opportunities for transit routes, residential developments, employment centers, and greenways to intersect or co-exist. By considering each of the transit types as a component to an articulated field which facilitates a variety of vehicles, movement speeds, and activities transportation networks can once again be conceived as the urban and regional ordering devices.

Food Sheds
Student Project by Erin White
The food production and delivery system sustaining the Triangle region contains local, regional, national and even global processes in growing, packaging, and selling but navigation within this system as a consumer is not always transparent (figure 5). By mapping food retail outlets in terms of type and location, the clear relationship between location of stores and distribution networks emerges (figure 6). Additionally, pockets of underserved neighborhoods or food deserts also become evident (figure 8). In order to better supply these communities with diverse food options, this mapping project focuses on the opportunities for a local food shed to augment the underserved the lower-come neighborhoods of South East Durham through a distributed network of adjacent cropland, community gardens, productive greenways, farmers markets, and local processing facilities (figure 7). This bottom-up approach to food delivery exposes food delivery process to the public and allows opportunity for contribution and appropriation.

Conclusions
Roads, highways, railroads, airport facilities, electric lines, gas lines, data centers, power plants, water lines, reservoirs, waste treatment facilities- these are a few of the diverse infrastructural systems which mark our landscape. Each is built according to an independent logic to maximize efficiency within specific terrain and to negotiate the co-existing social, environmental, and legal systems. Traditionally these infrastructural technologies have been the domain of engineers and public safety officials which has led to the implementation of closed systems that deny possible synergies with other networks or even public space. Today, architects and landscape architects have the responsibility to identify poly-functional synergies for our infrastructural systems which are flexible and anticipatory for multiple uses and user groups. Once infrastructural systems are coupled to be both opportunistic and productive, the viability of regional collaboration and public-private partnerships become economically attractive.

Infrastructural thinking offers static material practices a model by which to inhabit and influence dynamic contexts. Through component-based bottom-up strategies and at the scale of urban systems, the role of architecture and landscape architecture can be re-conceived as the site of “contact with the complexity of the real.” Infrastructure-based urbanism also offers a “practice engaged in time where the production of directed fields allow” for “program, event, and activity to play themselves out.” (Allen, 1999) Ultimately, offering a new instrumentality to the practices of architecture and landscape architecture by which to work at new scales and through new mediums to expand relevancy, responsibility, and influence.

Legend
Figure 1: Measures of Density in the Triangle, Emily Rudkin
Figure 2: Urban Sprawl in the Triangle, Emily Rudkin
Figure 3: Transportation Networks and their Influences, Emily Rudkin
Figure 4: Networked Urban Sections: Relationship of Housing, Jobs, and Transportation, Emily Rudkin
Figure 5: Food Delivery System, Erin White
Figure 6: Triangle’s Local Food System, Erin White
Figure 7: Southeast Durham’s Local Foodshed: Cropland, Open Space, and Access Networks, Erin White
Figure 8: South East Durham: Food Desert, Erin White

Bibliography
Allen, Stan, Points + Lines: Diagrams and Projects for the City. New York: Princeton Architectural Press. 1999.
Allen, Stan, “Landscape Infrastructures” in Infrastructure as Architecture: Designing Composite Networks. Katrina Stoll and Scott Lloyd, eds. Berlin: Jovis, 2010. 36-45
Belanger, Pierre, “Landscape as Infrastructure,” in Landscape Journal 28:1m09.80m95, 2009.
Birch, Eugenie and Wachter, Susan, “Chapter 1: World Urbanization” Global Urbanization,. Philadelphia: University of Pennsylvania Press, 2011.
Castells, Manuel, The Informational City: Information Technology, Economic Restructuring and the Urban-Regional Process. Oxford: Blackwell, 1989.
Castells, Manual, The Rise of the Network Society. Oxford: Blackwell, 1996.
Corner, James. “The Agency of Mapping: Speculation, Critique and Invention” in The Map Reader: Theories of Mapping Practice and Cartographic Representation, edited by M. Dodge, R. Kitchin and C. Perkins, Chichester, UK: John Wiley & Sons, 2011.
Georgia Tech University, Center for Quality Growth & Regional Development , Megaregions, http://www.cqgrd.gatech.edu/program_areas/megaregions/pam.php.
Gottmann, Jean, Megalopolis: The Urbanized Northeastern Seaboard of the United States, Pennsylvania State University, 1961.
Hall, Peter and Pain, Kathy, “From Metropolis to Polyopolis” in The Polycentric Metropolis: Emerging Mega-City Regions ed. Peter Hall and Kathy Pain. London: Earthscan, 2006. 3-16
Koolhaas, Rem. “Whatever Happened to Urbanism?” in S, M, L, XL (New York: Monacelli Press, 1995): 958-971.
Sassen, Saskia (2001) The Global City: New York, London, Tokyo. Princeton University Press, New Jersey, USA.

Arunjyoti Hazarika
Politecnico di Milano, Italy

Landscape as infrastructure:

Ideas for Urban transformation of Placa de les Glories as a new public node for Barcelona, Spain.

Keywords
Urban landscape, Infrastructure, Urban transformation, public node, public space, open space, inner city, urban projects, residual space, Barcelona.

*"Every generation reinvents the city and brings it up to date. Barcelona is not complete, nor will it ever be, because the concept of completing the city is contradictory in itself, but Barcelona is prepared to continue its process of definition"*1
Jordi Hereu, Mayor of Barcelona, 2006 – 2011

Objective | landscape as a stage and not a backdrop
In 1964, cultural historian Leo Marx wrote the machine in the garden, which explores an inherent contradiction in American ideology of space. Free economic competition and technological progress are valued equally with the tradition of landscape pastoralism, thus Marx observed, in our landscape the machine is accommodated in the garden. Today it is fair to say that machine is not so much in the garden as it is indistinguishable from the Garden, they are inexorably intertwined2.
This paper seeks to find various possibilities of using landscape as a tool for designing residual spaces in the city of Barcelona, concentrating on one of its major urban transformation project; the redevelopment of Placa de les Glories3, to be completed in 2013. This residual space has historically resisted attempts at development. It acts like an urban void in time and space in the city's fabric. Within this context of the new centrality, this paper questions on how landscape can become a new machinery to absorb the dynamic infrastructural flow of the city? how landscape can be thought of serving as an infrastructure? Also How can we think landscape as a glue between new urban developments within the city – a notion of new shared space.
In the case of Barcelona, where open and built spaces are well defined and the city has a strong geometric morphology, these residual spaces stands out as a deformity in the uniform texture of the city. But these deformities are not negative agents as it invites new interventions and creates opportunities for future growth. Also the outcome of these transformation could not only be made effective by construction of buildings and infrastructural systems but also by organizing sensibly the architecture of soil – the horizontal surfaces. Concentrating on horizontality rather than verticality as a conceptual idea for treating urban transformation and creating public spaces, which could be economically and culturally sustainable. Urban transformations for the city could be developed in such a way that intelligent intervention of landscape knitted with infrastructure in residual spaces can produce a positive impact for the city in multiple paradigm, and providing a meaning to new centralities within the city.
The term " landscape, " derived from the sixteenth - century Dutch word landschap , was originally used for the demarcation of land but has subsequently become associated with a way of seeing space from a distance. The term " infrastructure " has been used since the 1920s to refer to the basic physical and organizational structures such as roads, power lines, and water mains needed for the material and organizational aspects of modernity. So how can we think about merging these two fields? Or how can one be morphed into another?

Infrastructure suggests that it has to perform some kind of function. It is through this concept of functioning that we understand the way landscape should act as the stage for activities to occur, and not merely a backdrop. In order to consider landscape as infrastructure, landscape must perform and also it has to provide an output, being infrastructural, however, is also about multiuse: they must fulfill the requirements of public space and must be connected to other functioning systems of public transport, pedestrian movement, water management etc. The multiuse nature of the landscape can be defined by its secondary outcomes such as unique recreational opportunities, improved flora and fauna reserves and dynamic landscapes, and also at the same time generating interconnectedness between fragmented spaces within the city.

Introduction | barcelona and its urban transformation
Barcelona is now widely known for one of the innovative planning in the world. Internationally, it is celebrated for its accessible open space and walk ability. It has survived the economic, environmental and social changes of the last decades through focusing upon the provision of great urban spaces that centralize activity on a variety of scales: city, neighborhood, and within each block. In short, Barcelona has been transformed into a city that provides an example of how to facilitate increasing density while maintaining a livable and relatively compact city.

Image_2
The major catalyst of the modern urban transformation of Barcelona in the eighties to the present was the 1992 Olympics. With the end of a long dictatorship known as Franquismo, the city took advantage of its new found democracy as the Urban Social Movement began. Faced with serious problems of urban decay in both inner and peripheral districts, planners used the games to gain enough funding to complete an amount of reconstruction that would take any city decades to accomplish.
Olympic facilities were built on neglected urban areas, with the Olympic Village, developed on brown fields close to the coast. The rail lines that cut and divided the city from the sea were opened and for the first time in its history, Barcelona has been able to turn and face the sea with pride. Six artificial beaches were created to handle the capacity of tourists that would be in the city for the upcoming Games. This change was championed by one planner in particular, Oriol Bohigas, who used the Games as a springboard to built more than two hundred parks, plazas, schools, and other public facilities in Barcelona. Most of these amenities were inserted into derelict areas where crime was high. In one area in particular, El Rival, buildings were retrofitted to house a modern museum, police station, and other amenities.
Public space, mobility infrastructures, major facilities, and large scale services, provide the support for operations that help to establish the city's new structuring mechanism. These urban projects serve to supply links between less structured parts and consolidate the city's overall centrality, gradually phasing out fragmentation. The new structuring operations come together to reinforce the system of axes and infrastructures that establish the scale for the city as a whole, with morphological resources that combine building infrastructure, open spaces and services in one urban concept.
The big infrastructures that had to intersect some parts of the city were particularly relevant. Some of them had been built in the previous years and were already separating the parts of the city at each side. Some others had remained unfinished and left big gaps impeding urban continuity. In both cases they were been seen as an opportunity to be transformed into new focal points that could gather a series of activities around new public spaces instead of being breaking points with traffic intersecting the existing city.

Image_3

Excavations | placa de les glories as a new centrality
"Les Glories" Place, seen as the geometric centre of the city but it never served as a central square in the city. Now Municipality of Barcelona is planning a large park. This is a very simple representation of the project. The park will give a change of scale between the streets, the large infrastructural elements and surrounding built environments. Agbar tower4 by Jean Nouvel placed near the Glories area dominates the skyline and has a powerful landmark quality. The tower act as a signage/symbol for the glories area. On the southern side of the park, MBM arquitectes has proposed a design Museum, presently under construction that marks the end point of the park and indicating the relationship between the Eixample and the square.
The realization and the transformation of the 22@5 industrial hub, the focus has shifted to the need for this urban project, which at once resolved the road junction, extends connectivity by means of an intermodal center and grants the district city status. The concept will be accentuated by imposing clear geometric lines on the park layout at – grade streets to continue the Cerda grid. Existing Urban element like housing and facilities becomes the limits of the park.
The Parc de Glories will cover almost 12 hectares, with high proportion (3.3 hectares) given over to local and citywide facilities. The creation of local facilities within this landscape will correct the deficit in surrounding neighborhoods, and public services within that area will strengthen the district role as a new centrality of the city of Barcelona. It could become a cultural nodal point.

Image_4

Interpretations | urban carpet as a new order to organise the centrality
The new Urban carpet6 in the Glories area is a conceptual proposal and it is an interpretation and confrontation to city council's proposal. It retains the concept of centrality and goes deeper into integrating underground infrastructural functions with the ground level of the city . It challenges the idea of city council's green park that covers the high profile infrastructure beneath. It tries to morph the landscape into infrastructure. It also retains the memory of the existing roundabout as a void. Unlike the linearity of the wall, the void act as a nodal point. It becomes the specificity of the new proposal, such as an entrance or a vortex rising from the ground towards the city and into the sky.

Image_5
The void works as a sort of anchor within the larger field its part of. Lower levels of the void forms an important public space knitted with landscape features directly integrating with high speed train stations, metro station and other important infrastructural lines. Openings at the platform at the ground level allows sun penetration into the underground spaces of the station and shopping areas. The bigger void enhances the idea of public centrality and retains the conceptual memory of the place. It is like a big circular public plaza inserted into the ground that also serves as a junction for the station and connected directly to the infrastructural lines beneath.

Image_6
Thus a new centrality is being created by remaining 'voiceless'. Spaces are sculpted by going downwards or excavating the soil in order to balance the polarity between the verticality and horizontality and laying an 'urban carpet' that forms a collection of different public spaces in that area. It's like providing a catalogue of different public spaces integrated into one urban composition. An idea of inserting one urban system into another. Agbar tower dominates the skyline and has a powerful landmark quality. So the idea is not to compete with it but to take another route to create urban spaces that are enclosed, contained, and acts like a vortex in the present system of traffic mobility. Proposed urban spaces will try to absorb the streamline motion and generate a sense of buffer space between eastern and western ends of the city. Suddenly the junction of the main streets becomes an important 'public courtyard'.

Image_7
The overall impact of the master plan will be a field experience, comparable to an agricultural field and within that field there is an order in composing the elements like mass and void, landscape and infrastructure, built and open spaces etc. The urban space at the city level is well connected to the underground levels with different landscaped voids. These smaller voids allows sun and landscape to penetrate inside the station from city level. Here only the vertical element is considered as array of trees planted in a linear fashion that tries to connect northern and southern part of the city – acting as glue.

Image_8
These irregular voids will act as a enclosure as well as give a sense of human scale by dividing the larger field into smaller parts which can become courtyard at times and also accommodate different public functions and cultural activities. These elements also acts like objects in the landscape and It determines the spaces of places.
On the southern end of the Urban carpet, conceptually soil moves above the ground and creates five built masses and 'in between' spaces are used as public streets and shopping areas that connects to the northern part of the city leading to the design museum. The public buildings accommodates leisure, sports, performance and exhibition spaces and becomes a collection of 'cultural corridors' created between the linear buildings. Some of the blocks have been designed as social housing. These housing blocks enjoys a very strategic location and well connected to public functions in relation to new centrality.

Image_9
The slanted roof of these buildings have converted into landscaped gardens, that has a view towards the northern side of the city and also they become the part of ecological conservation as rain water collectors and provide different opportunities for public usage. These blocks also serve the needs of traditional flea market and well connected to existing nearby housing areas within the existing urban context.

Conclusions | thinking infrastructurally
In Transforming such areas the city is extending into a space that is not automobile dependent and enhances walk ability . Revitalization of such abandoned inner city are as have occurred in many parts of the world, and these transformation demands close association of community processes that has developed a vision for sustainable growth of the city.
These kind of urban projects are truly infrastructural because they operate instrumentally within the city, rather than they look like infrastructure. To negotiate the disparity between landscape and infrastructure, it needs a deep understanding of historical, geographical, and economic awareness of the way in which Barcelona have constructed landscape so far.
To conceive new meanings of landscape combined with infrastructure it is important to understand that infrastructure is more a process than a form, dictated by a multitude of parameters. The success of our engagement with infrastructure lies not so much in our ability to manipulate form, but rather in our ability to establish frameworks for the organizational strategies that themselves invents form. The marriage between landscape and architecture's apparent infrastructural impotence lie not only with the genius of capital and engineering hegemony but within their own scope of operation.
Rethinking Urbanism while trying to establish a relationship between landscape and infrastructure marks the eco-logical and engineered vision of the contemporary landscape. Foregrounding the nascent reciprocity between ecology, economy and energy in contemporary urban transformation, the potential of landscape design opens a horizon on pressing issues facing cities today to recast the infrastructural and geopolitical role of landscape as base operating system for future urbanism. Investigating the potentialities of ecology for future cities and infrastructures, the idea is to construct a clear and contemporary discourse as the field of landscape becomes the locus of intellectual, ecological and economic change of significance, globally.
So when we think landscape infrastructurally, the important argument is – do we have current cultural interest in our mind? Do we really care about cultural, civic possibilities that underlay design, and more generally, a cultural production?
If the answer is yes, within current and future discussion of landscape , the idea of infrastructure can be applied to almost anything and we have to start thinking about our contemporary landscape infrastructurally.

Arunjyoti Hazarika
Politecnico di Milano, Italy

Bibliography

Allen, Stan. “Infrastructural Urbanism” in Points + Lines: Diagrams for the City (New York: Princeton Architectural Press, 1999): 46-89.

Bélanger, Pierre. “Redefining Infrastructure” in Ecological Urbanism edited by Mohsen Mostafavi and Gareth Doherty (Baden, Sweden: Lars Müller Publishers, 2010)

Branzi, Andrea. “The Hybrid Metropolis” in Learning from Milan: Design and the Second Modernity (Cambridge, MA: MIT Press, 1988)

Barcelona, Transformacion, Planes y Proyectos, edited by Ajuntament de Barcelona (city council of Barcelona) 2008

Corner, James. “Eidetic Operations & New Landscapes” in Recovering Landscape: Essays in Contemporary Landscape Architecture, edited by James Corner (New York: Princeton Architectural Press, 1999): 153-170.

Frampton, Kenneth. “Towards an Urban Landscape”, Columbia Documents of Architecture and Theory, Volume 4 (1995)

Forman, Richard T. T. “Urban Region Planning” in Urban Regions: Ecology and Planning Beyond the City (Oxford: Cambridge University Press, 2008)

Gohsn, Rania. “Energy as Spatial Project” in Landscapes of Energy - New Geographies Journal 02 (2009)

Geddes, Patrick. “The Evolution of Cities” in Cities in Evolution: an introduction to the town planning movement and to the study of civics (London: Williams and Norgate, 1915): 1-24.

Gregotti, Vittorio. “The Road: Layout and Built Object” in Casabella No.553-554 (January-February 1989): 2-5, 118.

Hough, Michael. “The Urban Landscape: The Hidden Frontier”, Bulletin of the Association for Preservation Technology – Landscape Preservation, Volume 15, No. 4 (1983): 9-14.

Joan Busquets , Barcelona; the Urban Evolution of a Compact City, Nicolodi and Actar in association with Harvard University Graduate School of Design

Jackson, John Brinkerhoff. “The Public Landscape (1966)” in Landscapes: Selected Writings by J.B. Jackson edited by Ervin H. Zube (Amherst: The University of Massachusetts Press, 1970): 153-160.

Koolhaas, Rem. “Whatever Happened to Urbanism?” in S, M, L, XL (New York: Monacelli Press, 1995)

Lynch, Kevin. “Earthwork & Utilities” in Site Planning (Cambridge: MIT Press, 1962): 157-188.

Peter G Rowe, Building Barcelona: A Second Renaixença, Actar, 2006

Reed, Chris. “The Agency of Ecology” in Ecological Urbanism edited by Mohsen Mostafavi and Gareth Doherty (Baden, Switzerland: Lars Müller Publishers, 2010

Segal, Rafi. “Urbanism Without Density” in Architectural Design AD, Volume 78, No. 1 (Jan.-Feb. 2008): 6-11.

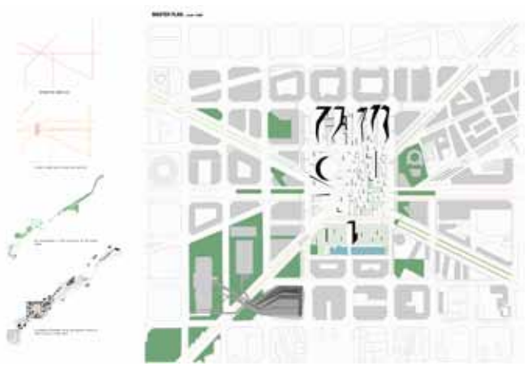
Waldheim, Charles. “Landscape as Urbanism” in The Landscape Urbanism Reader (New York, NY: Princeton Architectural Press, 2006)

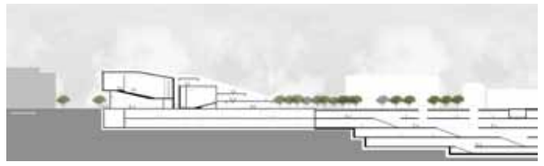
Notes

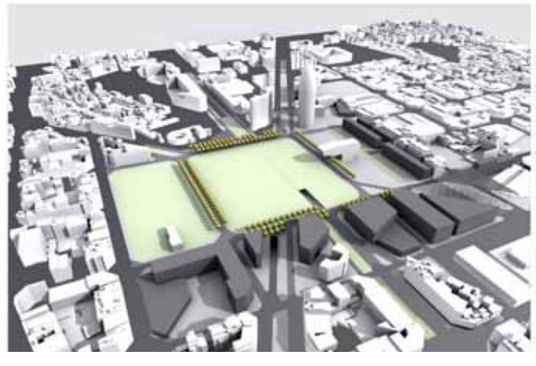
1. Barcelona, Transformacion, Planes y Proyectos, edited by Ajuntament de Barcelona (city council of Barcelona) p.7, text from presentation by Jordi Hereu.2008
2. Gary L. Strang, Infrastructure as Landscape in Places, P.4, 1996
3. Plaça de les Glòries Catalanes most often shortened to Glòries, is a large square in Barcelona, first designed by Ildefons Cerdà to serve as the city centre in his original urban plan. But nowadays relegated to quite a secondary position. It is located in the Sant Martí district, bordering Eixample, at the junction of three of the city’s most important thoroughfares: Avinguda Diagonal, Avinguda Meridiana and Gran Via de les Corts Catalanes. Currently it serves largely as a roundabout of elevated highways.
4. Agbar tower or Torre Agbar is a 38-storey skyscraper / tower located between Avinguda Diagonal and Carrer Badajoz, near Plaça de les Glòries Catalanes, which marks the gateway to the new technological district of Barcelona, Catalonia, Spain. It was designed by French architect Jean Nouvel in association with the Spanish firm B720 Arquitectos.
5. 22@ also known as Districte de la innovació (innovation district) is the corporative name given to a business development in Barcelona’s formerly industrial area of Poblenou, in the district of Sant Martí, nicknamed “the Catalan Manchester” in the 19th century. Its aim is to convert Poblenou into the city’s technological and innovation district, as well as to increase leisure and residential spaces. It’s still under construction, centered around Plaça de les Glòries Catalanes, is part of one of Europe’s biggest urban regeneration schemes, begun during the 2000s and still ongoing, spanning 115 blocks or 198,26 ha.
6. Urban carpet is a conceptual idea for the urban transformation of Glories area, presented as author master’s thesis at Politecnico di Milano , July 2011.

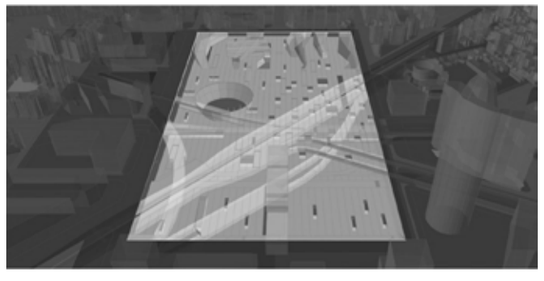
Legend

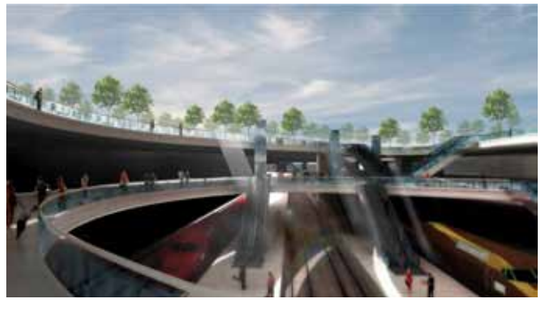
Image_1 : 3d rendering of proposed redevelopment of Placa de les Glories to be completed in 2013. Source: Ajuntament de Barcelona.(City council of Barcelona)
Image_2 : Aerial view of city of Barcelona. Source: http://countries-of-europe.com/?p=1342
Image_3 : View of Placa de les Glories. Source: travel blog Barcelona.
Image_4 : Comparison between existing urban condition, City council proposal and thesis proposal. Source: drawings from Arunjyoti Hazarika’s (author) Master’s thesis proposal submitted on July 2011 at Politecnico di Milano, Italy.
Image_5 : Void as a memory. Render showing the internal spaces of the void as an intermodal station. Source: Author’s Master’s thesis proposal.
Image_6 : Abstract diagram for the idea of voids inserted into the soil and forming enclosed spaces. Source: Author’s thesis project.
Image_7 : Master plan of the thesis proposal. Source: Author’s thesis project.
Image_8 : Section drawn towards the southern end of the project shows the integration of public building, station area and underground connectivity. Source: Author’s thesis project.
Image_9 : View of ‘in between’ spaces of public buildings as pedestrian pathways on the southern end of the proposal. Source: Author’s thesis project.











Roberta Ingaramo - Angioletta Voghera
Politecnico di Torino, Italy

Finding a design method:"Integrated multiscale project"

1. Issues

Nowadays an important issue involves the return to a holistic vision of the phenomenon of the city and of "doing" architecture. Cities, even with the design contribution of talented architects and planners, must be the outcome of shared rules also proposed by the inhabitants of the community. Today disciplines of urban planning and architecture are recovering the social dimension of territorial and architectural plans and pro-jects, starting from the Mumford's social theory and Geddes ecological ideas. These two theoretical models have promoted environmental health and quality living of people.
The quality of life dimension has become a strategic issue for sustainability.
In Italy this need to control architectural quality, by respecting European standards, contracts and construc-tions which conform the standards, has inspired the first bill for a law on Architectural Quality (2008).
The quality of architectural design has become an important element for city living. It aims to pursue the well-being of inhabitants within interrelations among buildings, environment and landscape. Design quality is also essential to large-scale projects and is the outcome of specific local projects and system design, defined by territorial and landscape planning strategies. Often in the Italian system, planning regulations have made unsuccessful city projects.
Local urban planning has a direct influence on wastes of resources, land consumption, lack of clear criteria for public spaces and of service projects, especially in city transformations which depend on planning "oper-ational documents".
In order to overcome these weaknesses, institutional actors promote design competitions, where invitations are sent to the "archistars". Design competition is used to the political, cultural and architectural resolution of unresolved urban and territorial areas.
In order to promote sustainability, quality, enhancement of landscape identity and diversity we need to pro-mote plans and projects which improve the physical environment, investing in the city structure, charac-terized by modern and efficient infrastructures, and in the enhancement of inhabited standards for new and existing buildings (Paper of Lipsia for the sustainable cities, 2007).
In order to achieve effective results, these cultural and economic investments must include various aspects of the project, physical, economic, cultural and social, both large-scale and local scale and should involve the population.
These needs open up new fields of study of settlement projects. These projects that are as yet unresolved require rethinking using methods founded on collective involvement for urban design in order to guarantee an effective enhancement of the landscape, with long-term benefits for society.

2. Starting from experiences

In the river territories project of the Sangone River Agreement (RA), which we've been involved in since 2008, it was obvious that new approaches to architectural design and town planning were required in order to deal with the issue of the enhancement of the territory, integrating projects for the transformation of nodes and larger areas, settlement models and services networks, relational spaces and green systems, both public and private, in accordance with the European Landscape Convention (2000).
The River Agreement (RA) is an innovative voluntary territorial governance tool that is particularly effective in defining shared strategies, actions, rules and projects for river basin environmental, landscape, economic and social requalification. It formulates strategic water protection objectives based on assessment of the general health of the ecosystem (river-bed, banks, and perifluvial areas), compatibility of land uses and settlement pressures, water-related social and cultural behaviours with direct or indirect effects on the water system. It is, therefore, a useful tool for weaving new relationships between territorial and local policies and projects, guiding design experimentations.
The Sangone River Contract represents the first experience in the Piedmont Region of participative planning and design and involves not only different landscape but also diverse territorial dimension of the project starting with a social inclusion design method. The RA is, in fact, a flexible tool, effective in mediating between local conflicts and interests through negotiated processes. Moreover, it is consistent with specific territorial vocations and able to establish a dialogue between various socio-economic programming instruments and typical planning, territorial, urban and architectural design tools and also with the various actors who contribute to constructing the territory. In this way, the RA succeeds in integrating the different territorial and landscape actions directed towards the setting up of ecological networks along the river, restoration of the natural conditions of the river and enhancement of areas of highest environmental prestige and biodiversity. In this view the RA guides local plans and projects for enhancement of the territory and of the perifluvial landscape.
The Sangone experimentation started on an interdisciplinary Workshop and a design competition for students of the Specilistic Courses of University 2 of Architecture at Politecnico di Torino and Mathematics, Physics and Natural Sciences. This occasion have been an interesting experience of integration of different disciplines in design approach in the RA participatory process. We have been tutors of the students involved in the competition, working with them on the project at different scales. We have analysed the results of the student activities, trying to formulate large-scale and local plans and projects, design guidelines and regulatory norms, according to a bottom-up approach, based on the direct involvement of institutions, social stakeholders and the local population. In these projects the integration of disciplines, scales of action and actors needs are the main design input. Within the different design visions and specific projects or solutions, Purini's theory: "Italian architecture can find its aim in the landscape" is clear. In fact Italian landscape, due to its physical structure and for visual reasons, can be assimilated to a structure made of "territorial rooms" that can be re-defined, if architecture is willing to take responsibility for landscape enhancement and requalification.

2. Proposing a method

Our methodological considerations refer to a sustainable strategy for "improving the quality of current life while conserving environmental potential for the future, waiving individual interests and the consumption of natural capital" (...), " as a prerequisite for living in harmony with Earth's resources "(National Commission on Environment, 1993, p. 2). This means we should consider in our projects the biophysical and social processes as result of development strategies (McHarg's ecological planning model, 1969, 1997), local regulations and planning focusing on opportunities, limits of physical and cultural resources.
The term "sustainable", often misused, oscillating between a term and a concept that evokes environmentalism (Mela, 2009), is referred indiscriminately to projects of different kind and scales, as a guarantee of a "certain quality". It often implies the use of systems and technologies that improve the buildings individual performance, but are not the real promoters of strategies that can be applied to plans, policies and projects for real sustainability, with tangible, identifiable and long term effects on our territories.
The recent international proliferation of planning and building certification (LEED) also emphasizes the need to establish objective criteria and indicators for evaluating sustainability of a specific project.
In this direction we tried to experiment innovative tools in three different projects in the ASP (Alta Scuola Politecnica) carried out by three teams of students, coming from the different Schools of both Politecnico di Milano and Politecnico di Torino.
The teams we have been tutoring in the past two years identified different approaches to implement the sustainability at different scales (local and large), with multidisciplinary approaches and diverse goals (methodology to assess projects, educational large system project, local technological and innovative project).
Two of the teams have developed solutions that address the theme of waste management, an opportunity to be aware about the waste treatment and to rehabilitate territories at large and local scale. The waste becomes the object of architectural, landscape and detail design experimentations, with long-term effects on large scale development, integrating the sustainability in a new design vision.
The last team has worked on a decision support tool, an assessment method using hierarchical analysis (based on the AHP Analytical Hierarchical Process method, Nijkamp et al.; 1990), tested in specific projects on the Sangone River in the Turin metropolitan area. This proposal is based on the possibility of considering sustainability in terms of a more extensive definition and using some project variables for decision-making instead of merely descriptive elements, tested through the public participation of institutional and social stakeholders.
The attempt to provide project assessment tools, also in itinere, is proof of the need to support decision-making processes, also at a project level, with scientifically acknowledged and shared methodologies, which may provide a partial guarantee of long-term quality.
In fact, also in Italy, in decision-making processes the focus has recently shifted from the project design to its "sustainability", repercussions, effects and real benefits for the environment, landscape and city, in terms of quality of life that the project can bring.
Therefore, projects can no longer be limited to solely architectural and technological consideration or exclusively town planning, but should meet people needs, through public and private participation, reconstructing complex and often compromised realities.
The concept of sustainability should therefore become an integral part of a project process which, identifying priorities for action, creates scenarios for the possible requalification of more or less extensive areas.
Methodological approaches are required to create a process of territorial, landscape and architectural planning, based on a different vision of the project and supported by appropriate instruments.
Our methodological proposal currently being tested, the integrated multiscale project (Ingaramo and Voghera, 2010 Amman, Jordan), with no scale limits, can be applied to an extensive area - regional, provincial and local - as in the architecture and design project.

It uses an instrument to provide decision-making support and an operational technique:
1) the Action Contract, a participatory planning instrument, useful for supporting the public and private decision-making consultation process (Ingaramo and Voghera, 2009);
2) transecting sections, an operational technique used to correlate the various elements of the project at different scales, to redesign territorial systems and complex landscapes (Ingaramo and Voghera, 2010, Rome SIU).

The integrated multiscale project can help in decision-making with a continuous process that links the various scales of action. It is also an attempt to overcome hierarchical vision of urban and architectural planning, immediately correlating structural and strategic visions with local projects, integrating scales and thematic areas, traditionally managed separately in the planning process.
In the integrated multiscale project natural, agricultural and urban areas play an equally important role in the layout of our territories. In local projects, an attempt was made to identify a new settlement model not restricted to definition of a building typology. It should be extremely flexible, but applicable to vast sections of the territory, placing building and voids, rural areas, public green spaces, private open spaces and buildings on the same hierarchical level.
The entire planning process must be renewed, from its conceptual phase to construction, putting the architectural project and technological solutions back in touch with the problems of the whole surronding, as Giancarlo De Carlo indicated back in the sixties, in his essays and projects.
The integrated multiscale project as the project for the valorisation of the landscape in accordance with the Cultural Heritage and Landscape Code (2004, s.m.i.), should be initiated by landscape planning, and in fact requires not only competence but also relevant responsibilities.
The Action Contract is an instrument that can be used to support decisions for the valorisation of the territory and landscape, resolve local conflicts and interests through the negotiating process, with reference to territorial vocations, linking social-economic planning instruments with those for territorial government. In fact, the Action Contract makes it possible to define project choices, balancing public and private, economic and proprietary interests, helping to: define guidelines and common standards, integrating project decisions with local resources, starting new projects and guaranteeing the operational capacity of the same.
The method uses the transecting sections technique, three-dimensional sections useful for planning complex territorial and landscape systems, integrating various scales of action, creating visions and projects for the enhancement.
The concept of the transect, which is based on landscape ecology describing the changes along gradients of biodiversity, can now be applied to town planning. The first experiments can be traced back to Patrick Geddes' "Valley Sections" (projects for the old town of Edinburgh and for the Edinburgh Zoo master-plan), which considered the relationship between the city and external space natural and rural.
This methodology is then used in New Urbanism transect planning experimentation (The Ahwahnee Principles - first congress in Chicago, 1993). Transect planning defines a series of longitudinal portions of the territory, from the city to the country. Each section is a fractal that "contains transitional spaces between the urban perimeter and each functional node of the rural system" (...) (1993). The potential of the transect as a town planning instrument includes: 1) ease of interpretation, 2) definition of relational systems, interpretational and regulatory criteria that can be translated into zones and processed with Euclidean geometry, 3) generation of immersive environments based on relations between biophysical and social characteristics, 4) creation of systems for interpretation and control that help promote growth in some sectors, encouraging pedestrian and bicycle transfers, improving local security, enhancing the identity of the community and providing instruments to protect and restore natural environments (Ingaramo and Voghera, 2010, Naples).
The method we propose re-examines the concept of transects, reworking it as a technique for the land and landscape projects. The transecting sections, the operational field for testing the project, let us define "transecting 3-dimensional" strategies for the valorisation of significant nodes (assets, values, resources, symbols, core zones of ecological corridors) and problematic nodes (degraded areas or disused industrial areas, under-utilized service areas, quarries, peripheral construction fringes, and landscapes devoid of any specific connotations) of the system landscape. These planning strategies are based on the equal consideration of the various elements of the system, with the focus on the relationship between built-up and open spaces.
It works with the scale of the entire system to define general actions for the organization of the territory and land uses and on the local scale for enhancement and innovation project of specific sites.
There are interesting implications for town planning and architecture as we can operate simultaneously in the three-dimensional and two-dimensional mode, revisiting the role of the project rendering system, offering an instrument of support and verification for the hypothesis of the project, without limiting the function to the publication of the image. This operational method enables discussion, also open to non-experts, to establish new organizational models on a town planning scale and new forms of living on an architectural scale, buildings, non-built spaces, detailed elements such as fencing, and furniture for public, semi-private and even private spaces, It works as well as correlating urban, natural and agricultural areas, valorising identity and diversity.

3. Testing the method

The methodology has been developed and tested in a series of project experiences that have shown the difficulties when dealing with complex issues such as the reorganization of the territory, landscape and architectural forms. The need to rediscover participation, reviewing methods used in the sixties and seventies, from the theories of John Habraken to the projects of Herman Hertzberg, for modern day, is evident in the widespread consensus on the hypothesis of transformation, which authorities must now implement and promote.
A first operational opportunity was our involvement in the construction process of the planning phase for the River Sangone Masterplan (March 2008), starting from the workshop we have been tutoring. When preparing the Masterplan, the need for other operational methods became obvious. The classical view of the project that follows the course of the river has been joined by a vision that considers the pertinent areas of the river

and those around the same, in order to extend the action of the project to the entire perifluvial belt, implementing a process of re-appropriation of the role of the river as a whole in projects for the city and territory. Only by rebuilding the identity bonds between man, society and the river, the territory can be re-launched. In the Masterplan vision the margins between areas with different vocations are redesigned, starting with the urban fringe which has today penetrated the bands of rural and leisure naturalness.
Project EIDO2050 was drawn up in line with the hypotheses for the River Sangone Masterplan (Ingaramo and Voghera, 2009), coming third in the International competition for the re-development of the former OMA and Industrial Chemistry areas along the River Sangone and for the valorisation of the extensive morainic hill area in Rivalta (Province of Turin).
EIDO2050 aims to encourage dialogue between the different disciplinary competences needed for the project of the extensive and local area inspired by sustainability. From a multidisciplinary and transecting view of the project, each element of the study is assigned an equal role. The project develops a view of transformation in various temporal phases (2016, 2025, 2050) for the Rivalta territorial and landscape system, through timely actions for the extensive area, closely integrated into an overall project strategy. Two ideas are proposed for the park - Agricultural to the north of the Sangone and Eco-park to the south of the river.
In this case, architecture becomes one of the elements of the territorial and landscape project in close relation with the values of the overall system of the extensive area, not to dominate the landscape, but to enhance it in terms of respect and integration of the requirements of inhabitants and locations.
Our research currently involves studies and master's degree theses in Italian and foreign territories, such as the "IN-OUT re-development project area leading into the city of Las Palmas - Gran Canaria" and the "Regeneration of Battersea Power Station in London . We are applying the transecting sections in more localized areas of investigation, with the aim of testing the entire method for the interpretation, understanding, and communication of "all" places, opening new paths for the project.

Bibliography

Affeltranger B., Lasserre F., La gestion par bassin versant: du principe écologique à la contrainte politique le cas du Mékong, in Vertigo – La revue en sciences de l'environnement, Vol 4, n. 3, décembre, 2003.

Bohl, C., Plater-Zyberk E. (eds.), Special Issue: Building Community Across the Transect. Places, Vol. 18, Issue 1, 2006.

Brain D., And Duany A., Regulating Place: Standards and the Shaping of Urban America, Routledge, 2005, pp. 293-332.

Brower S. N., The Sectors of the Transect, in Journal of Urban Design, Vol. 7, n. 3, 2002, pp. 313-20.

Brower S. N., Good Neighborhoods: A Study of In-town and Suburban Residential Environments, Praeger Publishers, Westport (USA), 1996.

Davico L., Mela A., Staricco L., Città sostenibili. Una prospettiva sociologica, Carocci Editore, Roma, 2009.

De Carlo G., Urbino. La storia della città e il piano della sua evoluzione urbanistica, Marsiglio, Padova, 1966.

Duany A. And Talen E., Help for Urban Planning: The Transect Strategy, in Journal of Urban Design, Vol. 7, n. 3 pp. 293-312, 2002.

Duany A. And Talen E., Transect Planning, in Journal of the American Planning Association, Vol. 68, n. 3, pp. 245-66, 2002.

Duany A., Special Issue: The Transect, Journal of Urban Design, Vol. 7, issue 3, Routledge, 2002.

Duany A., Introduction to the Special Issue: The Transect, in Journal of Urban Design, Vol. 7, No. 3, 2002, pp. 251-60.

Gans H., People and plans, Basic Book, New York, 1968.

Geddes P., Cities in Evolution, in Outlook Tower Association and the Association for Planning and Regional Reconstruction, Williams & Norgate: London, 1949.

Ingaramo R., Dall'immagine del costruito alla costruzione del progetto, Celid, Torino, 2009, pp. 144.

Ingaramo R., Voghera A., I Masterplan, in Concorso di progettazione, Contratto di Fiume del bacino del torrente Sangone Masterplan del piano d'azione, Provincia di Torino: Torino, 2009, pp. 9-10.

Ingaramo R. and Voghera A., Visione integrata e possibili evoluzioni, in Concorso di progettazione. Contratto di fiume del bacino del torrente Sangone Masterplan del Piano d'Azione, Provincia di Torino, 2009, pp.35-55.

Ingaramo R., Voghera A., Riverscape Valorisation Project: Strategies and Principles. The Sangone Case Study, in Lehmann S., Al Waer H., Al-Qawasmi J., Sustainable Architecture and Urban Development, Vol. II, CSAAR Press, Amman, Jordan, 2010, pp. 115-131.

Ingaramo R., Voghera A., Between urban planning and architecture design. Methods for sustainability, in «Inhabiting the Future... after Copenhagen, Atti delle Giornate Internazionali di studio», Napoli 13-14 Dicembre 2010, Clean Edizioni, 2010, p.1277-1285.

IPCC, Summary Report in Climate Change 2001, Synthesis Report, Cambridge University Press, Cambridge, 2001, UK.

IPCC, Climate Change 2007: Mitigation, Contribution of Working Group III to the Forth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge UK, 2007.

Mazza L., Trasformazioni del piano, Franco Angeli, Milano, 2003.
Mcharg J., Design with Nature, Garden City, New York,1969.
Mcharg J., Ecology and Design, in Thompson F., Steiner F. (eds.), Ecological Design and Planning, Wiley & sons, New York, 1997.

Nijkamp, P., Rietveld, P., Voogd, H., Multicriteria Evaluation in Physical Planning, North Holland Publications, Elsevier, Amsterdam, 1990.

Voghera A., Dopo la Convenzione Europea del Paesaggio. Politiche, piani e valutazioni, Alinea editore, Firenze, 2011.

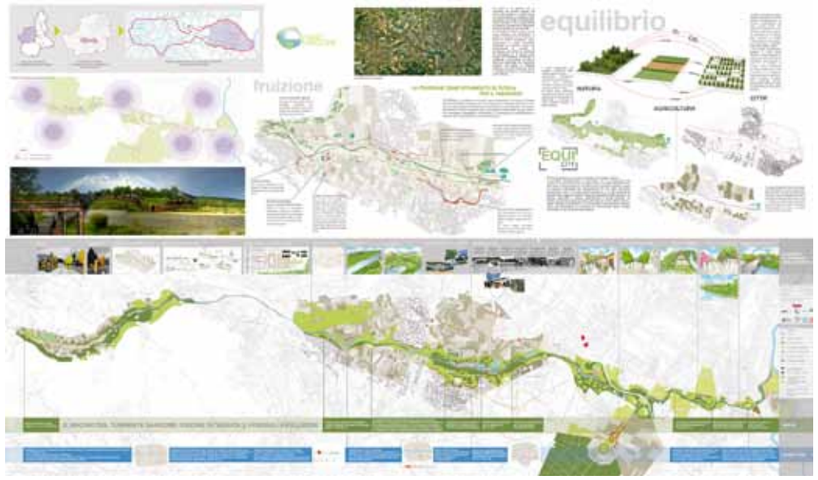


Figure 1. Workshop and Masterplan of the Sangone River Basin, 2009.
Figure 2. Regeneration Battersea power station, London. Master's degree thesis 2010.

Dag Kittang
Norwegian University of Science and Tecnology NTNU Trondheim, Norway

"The carbon-neutral settlement of Broeset" - Towards a new paradigm in urban planning?

Introduction
In this paper I want to discuss the development of a carbon–neutral settlement at Broeset in the municipality of Trondheim and how this could signal a major change in the understanding of urban development and planning. According to the Trondheim authorities, Broeset will be developed as a future-oriented neighbourhood that will provide important lessons for future urban development in Trondheim, and possibly even on a national level. Could we interpret the Broeset project as representing a new paradigm in urban planning – as introducing a planning paradigm of sustainable urban development? In this paper I will examine this contention/thesis.

Transport has always been a prerequisite for urban development.

Urban development has always been determined by our means of transport. Before 1900, city development was based on walking and horse drawn carts as the form of transport. For several hundred years the urban development of Trondheim was restricted to the peninsula made by the river loop. This was due to the limitations of the contemporary form of transport, but also because of the necessity of defending the city within fortifications. At the beginning of the 19th century the urban area started to expand. In 1901 the first tram line was in use and the city continued to construct new tram lines from the beginning of the century to around 1960. The urban structure was determined by this new transportation technology, the tram, and the development and expansion of the city continued on the other side of the river.

In 1960, the purchasing regulations for private cars introduced after the Second World War were abolished and the number of private cars increased significantly. This resulted in an urban sprawl where new urban areas were developed far from the city centre and at low densities. This was mostly due to the use of private cars and rather than the increase in population. From the 1960s onwards, use of private cars was decisive for the development of the urban fabric, as is still the case today. In Trondheim 60% of all work trips are by private car (2010).

Figure 1

Broeset – a carbon neutral settlement

The Municipality of Trondheim, together with The Norwegian University of Technology and Science (NTNU) and the research company SINTEF, have established a research project on carbon neutral housing settlements: "Broeset – Towards a Carbon Neutral Settlement in Trondheim". Among other questions, this project explores how urban forms can contribute to a more carbon neutral housing settlement through the reduction of car traffic, and favoring public transport, cycling and walking.

Figure 2

The starting point for this research project is the vision of a carbon-neutral neighbourhood which combines low energy demands and renewable energy with a social and sustainable living environment. The overall objective of the pilot project for Broeset is to create an urban community where each citizen's CO2 emission is less than 3 tons/year in contrast to the current average annual emission of 8 to 11 tons per inhabitant. This would reduce the emission of greenhouse gasses to the level the UN's climate panel (IPCC) states as necessary in order to avoid dangerous climate change (Trondheim kommune, 2009). Designing a settlement that enables people to lower their carbon-footprint is not only a matter of technology, materials and energy use, but also includes choice of lifestyle, housing patterns, and transportation. One of the goals for the development of the Broeset area is to make it easy and natural for the residents to live a low-emission lifestyle and, for example, choose other modes of transportation than the private car. The development of Broeset is intended as a pilot project that can be seen within a larger urban context and can show how urban form might influence people's choice of mode of transport. Public transport and environmentally friendly transport (walking and cycling) are a prerequisite for sustainable urban development.

Figure 3

As Figure 3 shows, about 1/3 of the CO2 emissions from Norwegian households relate to the purchase and use of vehicles. For a district designed for zero-emissions, it will be important to reduce the number of cars and car trips and transfer these trips to environmentally friendly transportation means.

In this study I wanted to investigate whether the Broeset project is an arena where new planning models can gain access to and challenge the old, and where the principles of sustainable development create new prerequisites for urban planning. By examining both the results of an architectural competition and the Municipality's Master Plan for Broeset, I have tried to shed light on what attitudes to different planning paradigms are reflected in this planning process. Is the development of the Broeset project a major challenge to the prevailing, market planning doctrine? Or does it build on, harmonize with or adapt to the existing planning policy?
How to change a planning paradigm?
One would assume that the goals formulated for the development of the Broeset settlement indicate a shift in the planning paradigm in which principles of sustainable urban development challenge established planning principles.

When different academic, professional and social groups present different opinions about urban planning and the development of towns and cities, they ex¬press the different discourses which influence them. Some of these discourses are more dominant in specific circles than in others, and through studying these discourses, we can learn more about why different attitudes are expressed in different social contexts, and what factors contribute to changes in points of view and ways of understand¬ing the issues involved. These discourses contain structured convictions, rationali¬sations, and forms of logic and knowledge which everyone in society relates to when making decisions, putting forward arguments, and making priorities. (Foucault, 1980) .

The opinions and understanding held by the different actors are to a great extent deter¬mined by the discourse in which they take part. Discourses provide a framework for actions and behaviour, so that our actions, our social practices, are influenced by the discourses we operate within or relate to (Martinussen, 2004) A given discourse supplies the par¬ticipant with a repertoire to draw on in opinion-making and communicating. When we wonder why different people in different positions have such different percep¬tions of an urban development, it is important to see their views and the practices these views entail in the light of the discourses they operate within. By studying patterns in what has actually been said and written, we can see how various statements form a system of connected attitudes and understandings, and what social consequences follow from these discursive presentations; from this, we can obtain valuable infor¬mation about why and how perceptions of sustainable city characteristics, qual¬ities and intrinsic value have changed throughout the discourse (Kittang, 2006). In the discourse relating to sustainable urban development, requirements for environmentally friendly transport will of course be essential.

The hegemonic discourse of car-based urban development could be challenged by the Broeset project, which introduces a car-free neighborhood as an important element of a sustainable urban development. The development of Broeset could be the arena where a new discourse tries to establish itself through conflict and controversy. New arguments and new forms of knowledge are produced continuously throughout the project and have supported this new understanding of urban planning. But has the project achieved dissolution of the hegemonic discourse and a deconstruction of the conception that urban areas should be served by private cars? Have principles of sustainable urban transportation challenged and replaced the hegemonic planning paradigm founded on the principle of the free use of private cars in urban transportation systems?
A paradigm for sustainable urban planning?
Widely accepted principles of sustainable urban development have been developed by many researchers and summarized in various guides and policy documents, both nationally and internationally. Aspects of the built environment that previous research has found to influence travel behaviour, include urban size and form, localization of urban activities, density and street grid layout, connectivity of pedestrian and cycle paths, restrictions on parking and the design of the transport system.

In a White Paper to the Norwegian parliament from the Ministry of the Environment, a description of the most important elements in an environmentally friendly city structure were established and visualized in a model, and summarized in the principles:

- Public transport is the backbone of the urban fabric
- Right business in the right place: the ABC-principle
- Densification in the construction zone
- Densification of transport hubs
- Autonomous communities that are less dependent on transportation
- Facilitating walking and cycling

Figure 4

Developing the Broeset project

Four architect/planning teams were selected to prepare solutions for developing this settlement. The aim was to show how the design of the town area could contribute to reducing greenhouse gas emissions to 3 tons of CO2 a year/person. All the projects include a marked intention to reduce emissions from the transport sector through the reduction of transport demand, improvements in transport provision, and by changes in travel habits and transportation choices. The consequences of reducing emissions were also documented for the different solutions selected.

Figure 5

On the basis of the four team projects, the Municipality of Trondheim has made a proposal for a Master Plan for Broeset. It has been stated that the political intention is to develop Broeset into a future-oriented, carbon-neutral district that will provide a lesson for future urban development in Trondheim. The goals for the plan are:

Figure 6

- Land use that ensures the functions needed in daily life as well as excellent recreational facilities, with the aim of avoiding unnecessary transport out of the area
- An overall transportation system that gives priority to pedestrians, cyclists and public transport rather than private cars
- Low parking provision: Between 1/3 and 1/2 of today's standard for new residential areas in Trondheim

Does the Broeset project construct a new planning paradigm?
By comparing the four planning proposals and the Municipal land use plan with the principles of sustainable urban planning, I will examine whether the project represents a break with existing planning policies, and whether these proposals express more groundbreaking and paradigm-breaking principles that are in line with the significant challenges of climate change.
Densification of the building zone
If one wishes to increase the proportion of non-motorized transport in an urban area, it is important to increase its density. This will improve the traffic base, allow increased frequency and make public transport more convenient, profitable and efficient. Developing a compact city is also an indisputable way of reducing the distance between work places, urban services and residential areas, and has a beneficial effect on a transition from road transport to walking and cycling.

Based on the Norwegian tradition of living in residential and urban areas with relatively low densities, the planning teams seemed to be sceptical of a dense urban pattern. Thus the planning teams were reluctant to propose a dense development to avoid the rejection effect that a dense residential area could have. Housing density in the four proposals varies from 1200 dwellings and 2640 inhabitants, to 2780 dwellings and 6160 residents. Most of the projects also wanted to keep the tradition of low-level buildings to maintain quality housing. The Master Plan proposes a density of 1680 dwellings, corresponding to an average suburban residential area. The Master Plan does not introduce a dense and more urban development of this city area and does not challenge the planning paradigm. What housing density means for the reduction of greenhouse gas emissions has not been thoroughly studied in the projects.
The right business in the right place
In a sustainable urban structure it is important to organize land use according to the principle "the right business in the right place". Locating companies near public transport nodes can reduce the extent of car traffic by transferring traffic to public transport, and requires integrated land use and transport planning.

This ABC–principle is designed to help reduce the growth of car travel in our urban areas; for example, as introduced in the Netherlands in 1989. The core element of the ABC location policy for companies is the classification of types of locations and types of companies. A-locations are highly accessible by public transport, for example, major public transport nodes; B-locations are reasonably accessible both by public transport and by car; while C-locations are defined as typical car–oriented locations.

Figure 7

Figure 8

The Broeset area has high car accessibility, located as it is close to a highway and low accessibility by public transport due to the low frequency of buses. This means that private car use is very high with a correspondingly low use of public transport. Thus Broeset is a typical C-location, favouring the use of private cars. According to the Travel Survey, 2010, 40.6 % of residents in the Broeset area travelled on a daily basis by private car to work or school, 22.6 % used bikes and 23.6% were pedestrians, while only 9.5% used public transport. The high use of cars is a challenge for Broeset as a pilot project for zero–emission settlements and needs to be addressed in the project.

In a sustainable city, new businesses need to be built up around public transport, and the growth of new jobs will mainly be in areas that have good public transport coverage. A significantly enhanced public transport service to Broeset would allow increased diversity of land use in this part of the city.

Broeset' s present situation with excellent car accessibility and a high use of private cars means that the establishment of new businesses will increase car traffic and emissions. The Broeset area will therefore be developed as a traditional suburban residential area, and will lack the diversity of a more sustainable and autonomous urban area with mixed land use.
Introducing parking regulations
However, in order to reduce the high level of private car use, significant parking restrictions are planned within the Broeset area. Trondheim has a parking standard of 1.5 parking spaces per dwelling in the outer parts of the municipality. In the Master Plan proposal for Broeset, the Municipality is considering reducing the requirement for parking spaces from a minimum of 1.5 spaces per dwelling to a maximum of 0.5 spaces. This is indeed a significant action to reduce car use. Additionally, the parking spaces are located on the outskirts of the residential area.

Good parking coverage is deemed to be attractive in a residential area, and real estate developers will consider parking as an important resource. The development of Broeset as a carbon-neutral settlement will depend on people's willingness to consider other means of travel than by car. However, such willingness is not very visible in interviews with people living in the vicinity of Broeset. Most of the respondents would not consider moving to an area free from parking spaces. Practical reasons are often mentioned, and a lot of the inhabitants take it for granted that they can own and use a car (Thomsen and Löfström, 2011). Based on these findings, it seems that the success of Broeset as an area with significantly reduced private transport will to a large

extent depend on the attitudes of the residents who move there. The interviews also suggest that behaviour and habits may be the biggest challenges when it comes to choice of transport. With the comfort, flexibility and speed the private car can offer, it will be challenging to create conditions that make it more convenient for the Broeset inhabitants to choose public transport over private cars.

Public transport as the backbone of urban structure

In a sustainable urban future, the development of a high quality public transport system is obviously the most significant contribution to changing transport patterns from private cars to more environmentally friendly transport means. Public transport should be the backbone of the urban structure.

The four project groups proposed various solutions regarding public transport for Broeset ranging from increasing the frequency of existing bus routes to the development of a modern light railway. The Master Plan places emphasis on a public transport system with buses throughout the area. However the plan does not establish the public transport system as a strong premise and as the backbone for development of land use in the area, which a model for sustainable urban development requires. The bus system, even with an increased number of departures, does not have the capacity or the quality of a light railway, and in addition, serves and maintains the urban sprawl created by the use of private cars. Improvement of public transport is an important aspect of increasing Broeset' s accessibility and the conditions necessary for a better public transport system should have been investigated more thoroughly.

A recent consultant report has examined the conditions required for a light railway in Trondheim, which could also provide a good service to Broeset. This future-oriented and sustainable solution for public transport has not been considered in the Broeset project, although it could have solved many of the sustainability issues that the development of this area has today.

Conclusion

Trondheim Municipality has ambitious aims for the development of Broeset. The goals of the project are in line with the conditions the IPCC says are necessary in order to prevent our ecological footprint from destroying our livelihood. It is then up to our politicians to create such conditions for the development of future cities so that a majority of the inhabitants will want to move to carbon-neutral districts similar to the one being developed at Broeset.

However, it is a prerequisite for the project that the people who move to Broeset are open to testing new solutions to urban living. The nature of the project actively encourages the inhabitants to change their way of life, to experiment with new lifestyles, and appeals to them to use other means of transportation than private cars, even when this is inconvenient? This pilot project needs people who are positive to living in a (nearly) emission-free residential area. It is likely that an innovative project like this will attract residents who are particularly interested. One should not consider this as a disadvantage, but rather an advantage because ultimately the success of the project is dependent on the residents – and a successful project is important in order to convey the experience to a wider audience and to inspire others to live a "low-carbon-emission-lifestyle".

But this study shows that the Broeset project does not introduce a new paradigm in urban planning, and with respect to urban form and transportation, is based on traditional concepts of urban development. High density and radical parking restrictions notwithstanding, Broeset will be developed into an area with high housing quality. Broeset is also intended to convey an important message and highlight the seriousness of the target of reducing CO2 emissions. The positive impact of attractive pedestrian areas, an improved public transport network, more space for other land uses than parking, savings in costs for parking, reduced noise and pollution, increased road safety and good housing quality should also be important characteristics of an attractive residential area.

Bibliography

Foucault, M. 1980. The Subject and Power: Selected Interviews and Other Writings, 1972 -1977, Brighton og New York, Harvester Press og Pantheon Books.

Harkjerr, A. M. 2011. Byutvikling i Trondheim havn. Kystkulturkonferansen.

Kittang, D. 2006. Trebyen Trondheim - forvitring og fornying. Ein studie av ein byplandiskurs. PhD, Norges tekniske- naturvitenskapelige universitet.

Martinussen, W. 2004. Kultursosiologi, Oslo, Det Norske Samlaget.

Ministry of the environment 2002. Reprt no. 23 to the Storting (2001 - 2002) Improving urban environment.

Solli, C. & Bohne, R. A. 2011. Klimagassbudsjett for Brøset - Bruk av et verktøy for beregning av et klimafotavtrykk for husholdningene på Brøset. In: MISA, M. (ed.). Trondheim.

Trondheim kommune 2009. Planprogram Brøset - en klimanøytral bydel. http://www.trondheim.kommune.no/broset/.

Figure 1: Developing the urban fabric of Trondheim, 1915 – 2000, (Harkjerr, 2011)

Figure 2: Broeset is a 35 hectare site located 3 kilometers south of the centre of Trondheim. Despite this moderate distance to the centre, the area is characterised by a suburban nature.

Figure 3: An average Norwegian household kg CO2 –eq/year (Solli and Bohne, 2011)

Figure 4: A model for sustainable urban planning and development. (Ministry of the Environment, 2002)

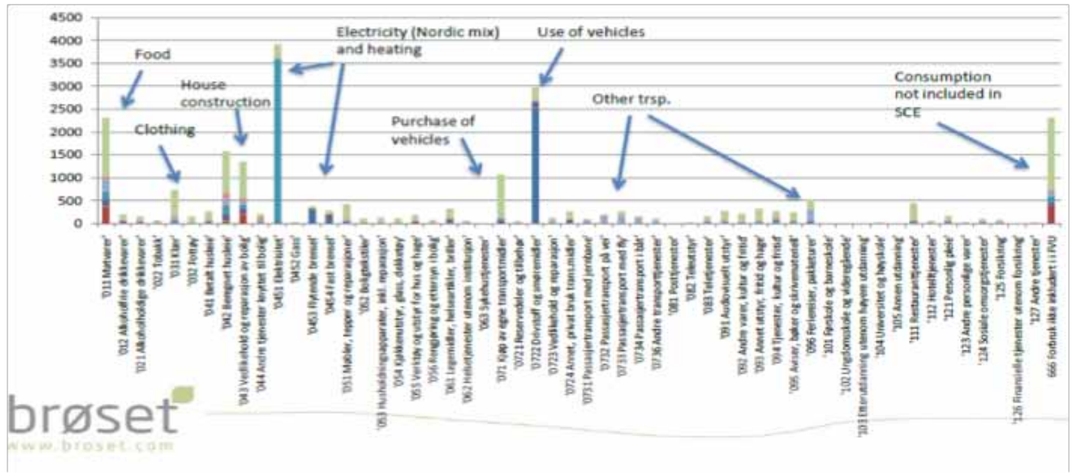
Figure 5: Projects from the four planning teams http://www.trondheim.kommune.no/content/1117702475/Parallelloppdraget

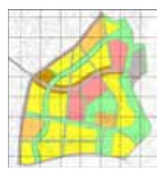
Figure 6: Proposal for a Master Plan for Broeset, Trondheim commune: http://www.trondheim.kommune.no/content/1117708385/Utkast-til-omradeplan-for-Broset

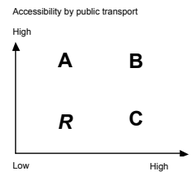
Figure 7: The ABC-principle

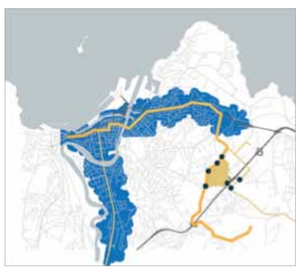
Figure 8: The "arc of public transport" (blue) and the location of Broeset (yellow) (Trondheim Kommune,2009)

- Public transport constitutes the backbone of the urban structure
- A vital city center
- Concentrated development
- Local communities development
- A continuous green structure
- A main network of pedestrian and cycle tracks
- The main road system located outside local communities, city centers and transport nods









Bradley Cantrell - Frank Melendez
Lousiana State University, LA, USA

Responsive Ecological Design Strategies

Conference Theme:
6. Infrastructure Networks and Landscape

The research presented in this paper is the result of an interdisciplinary collaborative design studio between the Louisiana State University Robert Reich School of Landscape Architecture and the Louisiana State University School of Architecture.
This advanced design studio, led by Associate Professor Brad Cantrell (LSU School of Landscape Architecture) and Assistant Professor Frank Melendez (LSU School of Architecture), focused on the research of responsive technologies and their potential to affect and transform architectural and landscape ecologies. The research resulted in a series of projects that address the tenuous relationship between abiotic and biotic systems.

Advances in technology have drastically altered traditional methods of analysis, construction, representation, and collabo¬ration. Using responsive technologies, designers address temporal landscape and dynamic architectural elements with biological and computational devices that are responsive to humans and ephemeral environmental stimuli. The paradigm shift in architectural and environmental design from the static to the dynamic requires designers to understand how responsive objects and systems function within larger ecological fields. This advanced topic studio explored the role of the designer and their ability to develop responsive architectural and land¬scape systems.

Participants within this studio were asked to analyze current urban, infrastructural, and landscape environments situated within one of the United States' prominent wetlands, the Atchafalaya Basin, located in central Louisiana and extending south to the Gulf of Mexico. The Atchafalaya Basin is made up of the Atchafalaya River, wetlands, and wildlife, as well as a vast network of urban nodes and infrastructure that primarily serve agricultural and industrial services, including various petrochemical companies. The urban and infrastructural conditions are diametrically opposed to the fragile ecologies of the basin. In an effort to promote a sustainably responsible model for the inhabitation and development of the cities and urban areas situated within and surrounding the fragile wetlands, the design studio explored ways in which sensing technologies can be used to enhance and yield archetypal design solutions for future urban growth and the affected landscape.

The studio was divided into two phases; the first phase focused on a top-down approach to design at the urban scale, the second phase focused on a bottom-up approach to design through the development of a small scale sensor driven component.

In phase one, students designed, developed, and submitted proposals for the 4th Advanced Architecture Competition: City Sense which was hosted by the Institute for Advanced Architecture of Catalonia (IAAC). The goals of this competition ran parallel with the interest of the studio, including speculative proposals that demonstrated the potential use and impact that real time data might have on sensor driven cities. The competition provided a preliminary means for the studio to pursue and expand upon the possibilities for sensor driven cities, landscapes, and infrastructural conditions. This prompted students to focus on top-down design strategies for the inhabitation and landscape of the Atchafalaya Basin.

Prior to designing their competition proposals, research was conducted on two primary topics; 1.) a series of specific sites located within the Atchafalaya Basin and 2.) various sensing devices and technologies. Students researched specific sites within the Atchafalaya Basin which included Morgan City, a port city located on the banks of the Atchafalaya River and the southern portion of the basin, Butte La Rose, a small residential community adjacent to the Atchafalaya River and located in the northern portion of the basin, and the hunting camp building typology, which consist of individual, remote structures, scattered throughout the basin. The wide range of contextual conditions led to a broad investigation and understanding of the basin's ecological conditions including; history, rural and urban development, flood control infrastructure, circulation systems, vegetation, hydrology, animal life, and geology. Coupled with research on context, research on sensing devices and technologies provided students with an understanding of various phenomena that can be captured, recorded, and measured. This also allowed students to recognize that the information collected from the sensors exhibited temporal qualities, that were dynamic and fluctuating, as opposed to static and fixed. The sensing research was divided into the following categories; acceleration, gas and liquid flow (viscosity/density), motion, optical radiation, orientation, pressure, thermal, electromagnetic, and chemical proportions.

Working in interdisciplinary teams of 6-7 members, the site and sensor research was visualized through a series of analytical diagrams and maps pertaining to the context and real time data. This exercise initiated the development of speculations which demonstrated the potential impact that real-time data collection and response might have for a self-sustaining city.

Fluvial Trans-Formation

The project Fluvial Trans-Formation began with an investigation and analysis of the existing river control structures and levees throughout the Atchafalaya Basin. The existing infrastructure is used to control and divert the Mississippi River to provide flood protection and to maintain navigation through the ports of New Orleans. Approximately thirty percent of the Mississippi River's water flows into the Atchafalaya Basin, with a much higher percentage, approximately sixty five percent, of the Mississippi River's sediment flowing into the basin. This excess sediment flow provides an opportunity for capturing sediment and redistributing it at specific zones within the basin to form land. Fluvial Trans-Formation seeks to achieve a land transformation intervention in the freshwater marsh south of Morgan City. The collection, distribution, and formation of the land will be implemented through the use of a dynamic gate system that responds to sensors that are distributed throughout the Basin. Sensors located upstream of the intervention detect the depth, velocity, and sediment load of the Atchafalaya River, informing the gates to shift and allowing sediment to flow through the series of gates. Simultaneously, another intricate series of sensors will be dispersed behind the gate system, calculating the amount of sediment being formed by monitoring the location of the sensor and measuring the pressure of the sediment upon it. These same sensors will record amounts of oxygen and nitrogen in the soil, determining when the soil is conditioned for vegetative growth. In conjunction with the embedded sensors, an aerial sensor will be acquiring infrared photographs and reading the shape of new land formation. Each sensor in the proposal will be equipped with a global positioning system (GPS), creating an integrated sensor network. The gates, in constant flux, react to the network of sensors and build land based upon input data from the constituent components.

Ecolibrium

The project Ecolibrium re-conceptualizes the use of a static infrastructure for managing the ecosystem of the Atchafalaya Basin into a dynamic infrastructural system which responds to the ever changing conditions of this ecosystem. Employing a network of sensing technologies that operate at various scales, the project incorporates a real time model of the phenomena that drive the Atchafalaya Basin. A network of sensors collects and analyzes data to monitor prevalent issues such as land loss, hyper-eutrophication, and invasive species populations. This real time data model is then used to enhance and manage the ecological conditions through micro adjustments to environmental phenomena. The temporal aspects of the model allow for continuous and multiple updates to propagate at a small scale, resulting in large-scale changes across the ecological system that comprises the Atchafalaya Basin. This offers a radically different and advantageous alternative to current practice, which results in static land management systems, infrastructural elements, and levees. Current land and water management strategies lack flexible and/or real time responses creating the need for a new system that is self-sufficient, autonomous, and systematic. This new ecosystem management strategy leaves a dynamic pattern in the landscape, one that is continuously computed and updated. The issues that this project highlights are siltation and deforestation, invasive water hyacinth control, and hyper-eutrophication due to excessive algae growth. The significant number of flora and fauna that are supported by the Basin are influenced by these highlighted issues and are a vital resource to the Acadian people of the area and to the economy of the surrounding cities.

The Ecolibrium system transforms disadvantageous occurrences in the Basin, such as concentrated siltation, into advantageous productions, such as micro-reforestation. The proposal incorporates the design of a mobile processor unit, which can cluster, expand and contract to perform various functions, including emitting sound waves to dissolve substrate in places where siltation is undesirable as well as linking together to contract and gather organic matter, which can be deposited and added as layers to new land formations. This automated process creates new, dynamic patterns in the landscape through a process of real time sensing and intervention. Ecolibrium represents a possible ecological management design solution, proposes a less invasive infrastructural system upon the landscape, and rethinks the connection between humanity and the environment. The project proposes to restore equilibrium through a hyper-efficient ecological maintenance system, which transforms negative ecological problems into positive by-products.

In phase 02 of the studio, the initial teams were subdivided into smaller teams of 2-3 individuals. Students were then asked to develop their projects through a series of four distinct stages; 1.) developing a digital prototype of a responsive device based on their initial City Sense Competition design proposals, 2.) creating a digital-analog prototype, 3.) creating a physical prototype, and 4.) re-conceptualizing the initial competition design proposal.

In order to facilitate the development of the phase 02 projects, research was conducted on algorithmic design logics as well as physical computing hardware and software. There were four pieces of technology that were implemented to connect real world data to a digital model; Rhinoceros, Grasshopper, Arduino, and Firefly. Rhinoceros is a 3d modeling program which allows users to create NURBS (Non-Uniform Rational B-Spline) models that are accurate and which can obtain a high level of complexity. Grasshopper is a generative modeling plug-in for Rhinoceros that supports algorithmic design and parametric modeling processes. The Arduino board is a single board microcontroller, similar to the motherboard inside your computer. Designed to make process of using electronics in multi-disciplinary projects more accessible, the Arduino board is designed with an Atmel AVR processor and on-board I/O support.
The board includes components to facilitate programming, and the standard way of exposing the connectors allows the CPU board to be connected to a variety of other components.
Firefly bridges the gap between Grasshopper and the Arduino board, by allowing real time data which is input from sensors to drive a Grasshopper model, as well as allowing the Grasshopper model to output information to the Arduino board, completing a feedback loop, and connecting physical and virtual environments.

The digital prototype used Rhino and Grasshopper to create a parametric model that was driven by inputs. The model focused on the formal aesthetic of the device and the transformations that the device made. The Grasshopper components were designed to constrain and control values in the digital model such as rotation (0-360 degrees), transformations (movement in feet/meters) and/or binary actions (off/on).

The digital prototype was then developed into a digital-analog prototype by digitally connecting the Grasshopper model, through Firefly, to the Arduino board and physically wiring the Arduino board to connected sensors. This resulted in the sensor data directly controlling the digital device, creating a virtual prototype that was connected to environmental phenomena. The interaction between the sensed data and its relationship to the parameters and constraints of the parametric model played a critical role in the design of the prototype. Each prototype contained 1-2 sensors that drove the actions within the digital model.
After creating a responsive digital prototype each group then used the digital model and analog sensors to construct a physical prototype. Firefly was connected to the Arduino board to drive servos, LEDs, and other physical components necessary to control and drive the physical prototype. The physical prototype expanded upon sensing and responses to create a fully articulated device that served as a proof of concept for a functioning portion of the project. The devices captured the complexity of the sensing methods and the associated responses and explored how the device might function within the environment.

Each group was then asked to re-examine the original team competition proposals and provide a revised scheme based on the developed prototype. Students were encouraged to explore bottom-up approaches to design by thinking about the proliferation of the component as a means of expanding the project into a system or parts that form a larger whole.

POD MOD . Sediment Conveyance
(project developed from Fluvial Trans-Formation)

Due to an excess of sediment and nutrients, areas of the Atchafalaya River Basin are experiencing a significant increase in land formation while the rest of the Louisiana coast is in decline. While there is a surplus of sediment and land building within the basin due to flow of the river, dredging, and weather patterns, most of the sediment is lost to the Gulf of Mexico.
To respond to this condition, the concept creates an infrastructure at the Old River Control Structure that would harness the existing sediment load and convey it downriver. This conveyance system creates a greater concentration of deposited sediment which would expedite the natural land building process. In addition to providing a more concentrated sediment load, the conveyed sediment and its final resting point is identified creating a sensor network that allows for a mapping of deposition patterns.

The conveyance system is comprised of two units, the first is an extrusion module that will be integrated into the existing Old River Control Low Sill Structure, and the second is a pod that is released from the extrusion module after a predetermined amount of sediment is captured. The pods float the sediment further down river allowing it to reach the salt/fresh water line where sediment and land building are most beneficial.

Once the pod reaches higher concentrations of saltwater, the metal clamp undergoes the process of galvanic corrosion, causing the clamp to deteriorate, deflating the pod which results in it falling to the river floor. This deposition zone near the saltwater line at the mouth of the Atchafalaya River begins to build concentrations of new land developing an aggregated and stabilized network of land building. The pods will begin to create a framework of support for the channels as they deposit, as the network concentrates deposition reducing the amount of sediment that is lost to the Gulf of Mexico. The pods will biodegrade in approximately four weeks while the RF sensor remains, and will be tracked by Coast Guard and Wild Life and Fishery boats, creating a real time network of the sediment deposition as well as land shifting over time.

As the process builds land south of Morgan City at the Wax Lake and Atchafalaya Delta's the result will create an expanding spatial framework for new habitat and a stabilized terrain for surge protection. The process will also reduce the amount of dredging needed by floating pass the problem areas in the river which will increase the amount of sediment deposition in the Atchafalaya Bay. It will also create a real-time mapping of the sediment deposition, which helps identify areas of the greatest sediment accretion, and also where the deposition process is being impeded so the system may be adjusted to achieve the most efficient results.

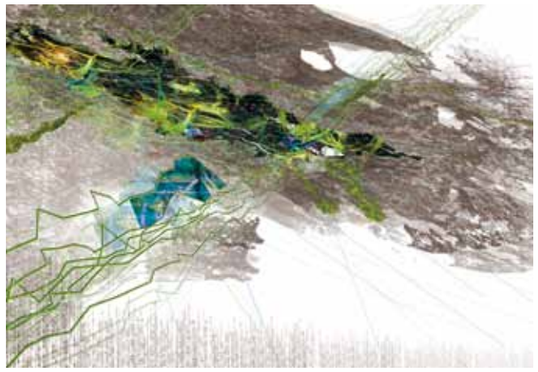
Vacuolar Effluvia Genesis
(project developed from Ecolibrium)

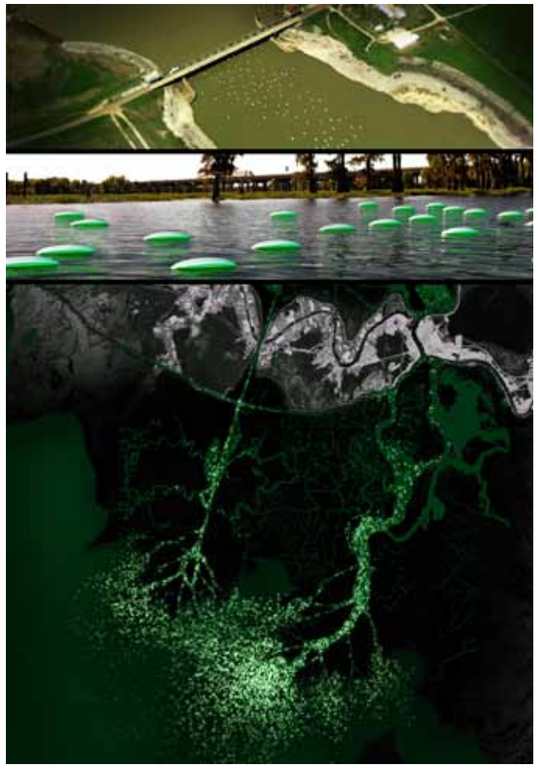
Vacuolar Effluvia Genesis (VEG), is defined as the sequestration of a waste product or harmful substance in order to create something new. This concept is used to capture or sequester

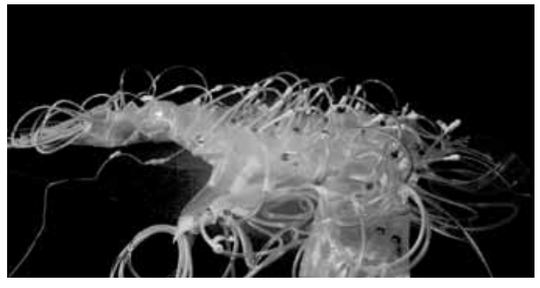
biological processes that have negative effects to elements of the environment and to use the by-products for productive purposes. Everyday 2.16 million pounds of nitrate based fertilizer enters the Atchafalaya Basin before continuing downstream to the Gulf of Mexico. After entering the basin these anthropogenic nutrients lead to an overabundance of algae blooms leading to a condition of hyper-eutrophication. Eutrophication is the natural oscillation in aerobic microbial decomposition and dissolved oxygen in aquatic ecosystems. As the massive amount algae dies and descends into the water column the algae is consumed by the microbes causing a spike in decomposition lowering the amount of dissolved oxygen resulting in a condition known as hypoxia.

VEG attempts to define the asymptote between the microbial decomposition and dissolved oxygen curves to maintain ecosystem health. The project attempts to insert itself within this ecological process to develop multiple positive effects.
This intervention is made possible by sequestering the process of microbial decomposition of algae into a synthetic abiotic structure. The composite of multiple units allows for a scalar response. Upon deployment to an area of potential hypoxia the units will initiate sequestration at the threshold of five ppm (parts per million) dissolved oxygen. Utilizing an articulated network of tubes dispersed below the sequestration system and throughout the water column the unit will collect algae laden water. The collection process will fill the system starting the decomposition process. At the end of the decomposition cycle, which averages approximately 14 days, the process has three by-products biogas, mineral matter, and water. The system is flushed back into the ecosystem except for the biogas which is collected in a series of pockets. As the gas is collected the structure rises into a full dome supported by the gas within each pocket creating a collectible structure and visual indicator of biogas production and environmental health. Each unit would conceivably produce between 500-600 liters of biogas per 1000 liters of algae saturated water and can be taken to a biogas refineries conversion into butanol.

Phase 02 of the studio explored new avenues and trajectories based on the initial competition entries, yielding improved design strategies that demonstrated connections between virtual and real world environments. The prototypes allowed for a better understanding of the potential applications for sensor driven devices and technologies to impact and enhance ecological environments. The studio culminated in the presentation of various design proposals that incorporated kinetic physical prototypes demonstrating the responsive system and how it would function within the urban environment, infrastructure, and landscape.







Sebastiano Provenzano - Giuseppe Pellitteri
Universita' degli studi di Palermo, Italy

The waterfront project for the historic centres: the case of the redevelopment of the historic port of Cala di Palermo

The urban renewal project of historic areas of port waterfront.

In recent years, with widespread coherence, the port authorities have demonstrated themselves inclined to cede areas included within the perimeters of their jurisdiction, and have designed them as areas of public use being nowadays difficult to adapt them to infrastructure functions. This process, now underway with growing popularity, represents an important emblem of the now established end of the war of position, which has seen in past years public administration and port authorities face each other, due to a sectorial system of planning rules. This new armistice season has caused, as a physical effect, a progressive increase of port areas in which they were introduced as new life blood, activities that are highly differentiated from those traditionally accepted by the ports, we think about the cases in Copenhagen, Barcelona, Amsterdam, Genoa, etc.

During the last years the issue of the requalification and transformation of the urban port and peri-port areas has become one of the principal declination of the complex universe of the urban regeneration. In the most large cities of water of the world from the relics, often dismissed, of large urban port systems, always more often new parts of city rise that exploit the endowment of this important reservoir of free soil introducing new functions compatible and coherent with the presence of the water.

This is what happened in England, in the United States, in Netherlands, in China, where the original urban ports, now became insufficient to contain the large spaces necessary for an international hub port have been transferred outside the urban perimeter, leaving to the cities areas ready for morphologic and functional reconversion. We call these ports the relic ports, meaning with this term those port infrastructures inside the urban perimeter that have ceased their infrastructural function and that offer themselves to total rewrites.

The Italian condition, as well as that of other countries overlooking the southern Mediterranean, appears deeply different and much more complex of that until now briefly described, consolidating only partially the useful paradigms and the good procedures used abroad to govern the processes of recuperation of urban waterfront areas.
In fact in the most cases the urban ports are still functioning and often they occupy the more central areas of the city. This condition makes further complex the reconnection between the port area and the urban area; in fact the ports continue to absolve their infrastructural function with the connected exigencies of security that in the reality entrench them behind barriers and boundaries excluding them from the urban continuum and limiting strongly the fruition of the community.

At the same time the Italian ports, even due to deep variations of the naval transport system, often host in their inland strongly underutilised areas, nowadays disconnected from functions and that well would apply for integration with the rest of the urban reality. In this sense a specific condition of the urban Italian ports (or of other similar contexts of the Mediterranean) is delineated, that we could define hybrid port, in which the pressures coming from the adjacent urban system that requires new space of fruition and the reattainment of a symbiotic relationship with its own waterfront must be added to the high complexity due to the persisting port activity.

The port cities that, born on the sea now see the space that justify their same foundation, monopolized by the underused mono functionality of the port area, identify in residues interstitial spaces between these and the port the ideal places of an implosion able to generate new spaces rewriting an identity often forgot.
According of this considerations is believed that that is possible to consider as already started a new phase of regeneration of the waterfront, that we will call Waterfront 2.0. The project of waterfront 2.0 has to be intended as a process that is capable to transform the port cities in port-cities (Bruttomesso 2004), to say cities in which the interaction between those fields tends to assume boundaries more ephemeral than those assigned by the rigid logics of delimitation of infrastructural systems and in which the hybridisation of the functions enriches the range and the value of their traditional uses.

This process of reconversion, of rewriting, that invests various sectors of economy and society finds, as always it happens, in the project of Architecture its physical dimension more representative, to which, in many cases it is attributed the definitive responsibility for the success or failure of those initiatives.
In this sense, to the urban project, is attributed a responsibility that is outside the pure formal result, having continuously to confront with a multitude of interdisciplinary problems and scalar interactions that impose a continuous revision of the traditional professional paradigms.

Therefore in these complex urban projects, the rule of the designer is always less that of creator of shapes and always more that of bricoleur, able to “keep together” the different disciplinary specificity of which these interventions are composed. In this logic the research unit intends to pursue a continuous hybridisation with the other disciplinary sectors represented in the ambit of the national coordination of the research (City Planning; Landscape; Technology).

The reservoir of urban soil, that the cities have seen donated them (or in many cases given back), due to the total or partial dismissal of their port areas or to the reconversion of areas of their waterfront, has represented an occasion of experimentation of the contemporary project, otherwise rare, and at the same time has offered the possibility to experiment different modalities of interpretation and new conceptions of the public space in terms of uses, and functions. This leads to consider the areas object of this peculiar modality of resemantisation as a significant occasion of intervention that solicits a debate updated on the qualities and role of public space in the contemporary city.
In particular the port areas have provided to the contemporary city surfaces of unusual size, to rewrite and destine as collective places and in this no frequent occasion of offer of wide spaces, have allowed the exercise of new and unusual proposals of project for the public space. Following these considerations, it appears sustainable to affirm that in these areas are often offered opportunities that fit appropriate scenarios to make emerging with clarity new declinations of the public spaces.

The project of the public space of the waterfront areas has to assume prior two responsibilities on which the research will investigate in a specific manner: on the one hand representing an occasion of conversion of the urban process in a perspective grey to green, on the other one taking charge to multiply the utilities to be made available for the community. The public spaces of the waterfront of new generation have to be virtuous paradigms of a new sensibility referred to the resources of the urban soil and the natural resources, their project will prefer the use of recycled materials, will pursue the introduction of technologies capable to contribute to their energetic self sufficiency and will provide for the introduction of innovative functions but compatible with the landscape and environmental context. Further these new public spaces are candidate to be the field of preferential experimentation for intervention of architecture at zero volume.

The case of Palermo: The renewal of waterfront start from the Historical centre seaside.

The planning history of the city of Palermo is marked by a slow process of “removal from the sea”, as if to deny the etymological roots of his name, Pan-Ormus: all port. The development of the city in the ‘50s and ‘60s occurred in the absence of a farsighted planning instrument able to connect the city to the sea. Along the urban coast from south to north, the sea, inaccessible, physically and visually, hidden by an uninterrupted series of limits. The coast of the city is configured as a paradigmatic representation of all the critical issues of unresolved relations between the coast and the city landscape and environmental degradation, inaccessibility and lack of services.
A condition of severe degradation due, over time, by a careless urban management and a general lack of social sensitivity towards the environment and their own city.
As a consequence of the bombing of the Second World War, which destroyed the historic city Centre, it was preferred, rather than restarting from an immediate recovery of intra moenia buildings, start an uncontrolled building speculation outside of the historic centre, leaving it in a state of deterioration during fifty years.

Nowadays, Palermo lives an important process of repossession of the relationship with its own sea through a renewed collective consciousness and a new planning season that has considered the sea as a main element of the city identity.
This recovery process of waterfronts has started just from the historic centre, where the damages caused by half a century of neglect and abandonment of the waterfronts were greater and more evident.

The first intervention was represented by the project by Italo Rota for the Foro Italico, the historic sea-promenade. First example of requalification of a public space near the sea, this intervention integrated with the creation of a garden, has woken up in the community the dormant memory and awareness: Palermo is a seaside city.

Close to the historic city, in the history the Foro Italico has represented the sea-promenade of the bourgeoisie and the aristocracy of Palermo, until World War II broke the union that bound this area to the sea. In 1944, stopped the massive bombing of the city, it was decided, in a not so much far-sighted way to deposit the debris removed from the city in this area. The coastal embankment thus formed moved away the coastline from facing urban constructions. In 1998, during the G8 summit, the area was, for the first time cleared and freed from improper uses, and destined to plant a uniform lawn. The intervention of Rota, conditioned by modest budget was extended to an area of approximately 10 hectares and is based on a few elements: a system of bollards that “protect” the lawn, a bike path and a series of pedestrian paths concluded in an equipped seating area placed in proximity of the sea. The few elements are enough to characterize a new place of the city, impressing themselves for their iconic force in the minds of Palermo’s inhabitants. So Rota has defined a new environment full of meanings and references.

The project establishes unusual but dense relationships with tradition and identity of the place. The silhouette of the ceramic dissuasive elements which allow access to the lawn to pedestrians only - pottery made by craftsmen of the city - once again proposes the profile of the bust of Eleonora d’Aragona sculpted by Laurana, as a surface of rotation on a vertical axis enveloping the surface of the single bollard. The furnishings, the seats and the decorative elements are related, without concessions to the vernacular, to a widespread Mediterranean tradition.

The intervention of Italo Rota is populated with figures, the result of a successful hybridization between an abstract and syncretic vision of Mediterranean and Sicilian identities. They are figures that establish, without any expressionist drift, in a play of continuous references, a joyful relationship with public space defined thereby. They could be exchanged for items of street furniture, while they carry out this use but not giving up the desire of an artistic will. The lawn is occasionally interrupted by small depressions in the ground, almost a playground, where, between the textures of a more thick vegetation, it is possible to see the dissonant chromatisms of pigmented sands. Bike and pedestrian paths are marked out by bi-colour drawings that remember us the motives used by Burle Marx in the long beach of Copacabana. In this place the first thing that appears is not the function or the role, but the sense: giving back to Palermo’s inhabitants a sense of belonging to a seaside city. Rota created a horizontal land mark, a surface project which has already established deep roots with the city.

The Cala renewall project. (Port Authority-Arch. Sebastiano Provenzano-Arch. Giulia Argiroffi)

This important regeneration process was started, as mentioned thanks to a series new tools of urban planning, among them,the most important is the new port master plan, drawn up by the Port Autority of Palermo. A significant portion of the waterfront area of Palermo is part of the jurisdiction of the Port Authority, which in recent years drawing up the new Port Master Plan, has begun an important process of reconnection of the coast and the port with the city. The Plan provides a series of actions designed to hybridize to the port functions defining new public spaces open to the fruition of the community. The waterfront master plan was developed within a Project workhop specially created: The Architecture Workshop of the Port of Palermo.

The workshop, deeply wanted by Port Authority Chairman Prof. Anthony Bevilacqua, has been the driving of the design process of urban regeneration of the seafront and has represented a major confrontation with the entire citizenry. The workshop, composed by 12 young architects from Palermo, coordinated by Prof. Maurizio Carta and architect Flavio Albanese, was designed as a laboratory, an urban center, open to the city, in which to share the ongoing projects establishing a continuous dialogue with the city government and the citizenship. For the first time, the city has had a chance to reconsider its relationship with the sea with the ambition that, in keeping with its history, a new Palermo could born again only from its port. The workshop, in addition to treating the masterplan, produced a series of pilot projects, distributed throughout the area of jurisdiction of the Port Authority.

The redevelopment of Cala Old Port is the first of these projects have been realized as well as one of the most important urban regeneration projects carried out in Palermo in the last thirty years. The decision to start the process of rewriting its urban waterfront from the port of Cala plays an important symbolic value. The Cala is the historical port of the city, the first port of the Phoenician city. Generated naturally by the estuaries of the Rivers Keimonia and Papireto, which now flows underground and which, originally, was licking the peninsula on which developed the first urban settlements. Only the semi-circular shape, permanent part of the morphogenetic evolution of the city remains today of the original estuary.The first piers, protected on the east by the Sea Castle, of which today only the foundations remain, and some parts of the fortifications, were built between 1300 and 1445. The Cala was the main port city until the sixteenth century, although over the centuries, with the completion of the first piers of the new port, was gradually relegated to a role of fishing port.

Over the last seventy years the Cala, once a fulcrum of commercial activities and port facilities, has suffered, because of a bad post-war urban management of the historic center, a process of progressive deterioration that had led to a total perceptual, physical and functional fracture also compared to the nearest urban context.
The project covered an area of approximately 27,000 sqm characterized by the presence of the Sea Castle, whose ruins, now rehabilitated were returned to the use of the community.
The area of the Sea Castle, which remained, as mentioned only portions of the ramparts and fortifications, has been rehabilitated, making a cleaning of its sedime. Today this area is an archaeological park open for the fruition and in which, during the summer, is organized a music festival.

The project involved the demolition of more than 2,000,000 cubic meters of illegal or illegitimate accretions stratified over the past fifty years that precluded the use and sea view.
The project was set on a double need. Ensuring a new feature to the marina, equipping it with adequate services to boaters, and attribute to the Cala the role of large public urban space.
By pursuing this dual purpose, diversified interventions were provided: the creation of a pedestrian park square, a new paving, the re-use of historic paving, a lighting system, new street furniture and the construction of three small buildings designed to host the headquarters of the club, coffee shops, gyms, a swimming pool with solarium and viewpoint.

The main building, named club house, positioned perpendicular to the edge of the dock is the background of the promenade. Along its linear development (about 40 m.) are placed, 4 stand, designed to accommodate operators and dealers of boat places at the most close to the sea, a cafe. The building is characterized by a large terrace, panoramic, accessible by stairs

and a ramp for disabled. The terrace, with a long seat supported by the parapet provides a space for relaxation and for the appreciation of sight of the whole Cala of the Archaeological Park, and in the background Mount Pilgrim, one of the main icons of the city. The terrace, characterized by a solid wood flooring planks and railings in steel and wood aims to revive the image of a bridge of a ship in port. The overall image of the building is strongly characterized by the coating of solid wood planks, with a modular rhythm define the façade, bris soleil systems placed at the windows, the external face of the railing and the sloped ceiling of the porch.
All the exposed structural elements (beams and pillars) are in steel colored white and all internal and external flooring is laid in planks of solid wood. The use of slatted wood gives a strong unity to the facade also contributes to saving energy during both the summer and in winter due to the effect induced by the air chamber created between the timber wall and the internal plasterboard .

At the opposite side to clubhouse building, is located the second small building. This small building houses a local site of a clubhouse, a cafe with adjoining space for pouring.
The functions are all gathered under one shelter light, made of a metal plate, supported by very slender white steel plates.
The fulcrum of project is the circular promenade that follows the development the quay, whose limestone paving arranged radially intends to highlight the relationship with the sea.
The different curvature between the circular dock and the adjacent street, was resolved with the creation of one green belt. In this green belt has been planned the positioning of benches and seats, and lighting systems, in order to leave free the entire development the quay.The different curvature of the circular dock and the adjacent street, was resolved with the creation of two bands compensation by the geometry less regular and on which a plan has been designed grassed. In this green belt has been planned the positioning of benches and seats, and lighting systems, in order to leave free the entire development the quay. The design of the platform new paving provides the repetition of a module constant consists of slabs of stone of a size of 30x80 cm, arranged in rows radial that refer to the geometrical centers of the entire plant. The walk includes a cycle track beyond which, towards the road, gives continuity to the new cycle routes provided by the Port Master Plan and Plan of urban mobility. The aim of the project in line with the urban design of the waterfront, is to return to the dock of Cala the role of urban port, where port functions coexist and enrich the public use and where the city can discover again the etymological symbiotic relationship with its sea and its port.

Bibliorgaphy

Bruttomesso R., Ancora sul water-front ,in AA.VV. "The maturity of water front", Marsilio editore,Venezia, 1999.

Bruttomesso R., Giaimo C., Porto, città, territorio, in Urbanistica informazioni n.187/2003

Bruttomesso R., I waterfront delle isole, Marsilio Editrice, Venzia, 2005

Carta M., Next city: culture city, Roma, Meltemi editore, 2004.

Dell'Osso R., Il paesaggio del waterfront tra storia e tecnica, tra mare e terra, Clup, Milano, 2005.

Dell'Osso R., Bugatti A., De Lotto R., Tra storia e tecnica, tra mare e terra, Clup, Milano, 2005.

Provenzano S., Portocittà, caratterizzazioni e variazioni d'identità di un fatto urbano, Maggioli, Milano 2008

VV.AA., Città-porto, catalogo della X Mostra di Architettura della Biennale di Venezia, Marsilio,Venezia,2005

Legenda

Photo 1 Overview of the intervention (Photo by Sandro Scalia Archive Port Authority of Palermo)

Photo 2 The Quay towards the building clubhouse-cafe

Photo 3 common panoramic terrace (Photo by Sandro Scalia Archive Port Authority of Palermo)

Photo 4 The Square in front of the clubhouse building cafeteria

Photo 5 Club House with the d

Claudio Rossi
Universidad de Los Andes , Colombia

Contemporary mutations in the complexity of Bogotá.

Introduction

Studying the urban complexities of Bogotá requires a confrontation with the traditional propositions of the city. The new interactions of the inhabitants of the city with these urban spaces and especially the retail space, invites to find redefinitions of the concepts that have shaped the spaces of the city itself. Then, we can say that the premise for this research is that the Mall (1) is par excellence, the public space of contemporaneity and that it has become the multifunctional substitute for the piazza as the space of permanence and convergence.

This claim can be made, when there is recognition of the change in the conception of public space; when we can recognize that the Mall produces territorial reorganizations and reformulated relations between the public and the private. Therefore, the purpose of this research is to demonstrate that approaching to the phenomenon of the Mall in Bogotá and analyzing its urban and formal transformations influenced by the user, we can identify the conditions of expansion and contraction of the city. It will then proceed to show a qualification of four shopping Malls in the city, which have developed a particular identity with specific languages and mutations (2) to show the dynamics between city, user and Mall (the building itself). These are the topics that we are interested to develop in this article.

Theoretical framework

The contemporary city is an inexhaustible subject to define and analyze, so, in methodological terms, we would like to present an exercise in delimitation of concepts and analogies and thus address in a more comprehensive manner the important theoretical topics for this investigation and the object of study proposed.

A first reference is made to Borja (2003) in his conception of the city to conclude that the contemporary city is a network of complexities, a space of social dynamics, a scenario where the relationships between people and institutions makes a fabric with different types of interactions, axes and encounters, between the agents that inhabit it.

Understanding Bogotá as the contemporary definition of Borja gives us an approximation of the complex city, subject of this research. This investigation points to get rid of the static concepts of the urban. To understand that everything that defines the traditional (old city) is capable of changes in order to apprehend its contemporary condition, therefore the definitions of spaces tend to overlap, blend or even inadvertently blur out to the citizens.

The excesses of time, ego and space described by Augé (1993) in his text of the non-places, results in the lack of space appropriation of post-modernity, which drives the lack of history in the "new places" and which are set to meet the demand of a support for the identity. The progressive extension of the urban limits in Bogotá, in conjunction with the segregation of land uses, has made the historic city center lose its power of cohesion. If we overlay layers of the non-recognized centralities of Bogotá through time, we would find that the ones that have grown in recent years have been driven mainly by the dynamics of consumption (3). The new city centers no longer coincide with those old centers regardless of their historical significance. Then, the logic with which the contemporary city develops establishes a series of emerging centralities, where the Malls assume an important role, by giving them identity.

Therefore, if there are multiple identities from these emergent centralities, then, we can assume two things: first, that these centralities redefine the usefulness of the historical center and second, that the historic center with its conceptual loadings, inherently requires a redefinition of its functions. Inevitably, in both ideas there is a classic understanding of public space. Koolhaas (2006) in The Generic City addresses the problem of stress in the ways that town centers were constructed or reconstructed, recognizing that it has left a void in the way that the periphery develops, since this last "(…) has been an orphan". The analogy concludes that the traditional public space is still studied and theorized in excess, while the phenomenon of the shopping center and its centralizing and compressing role in the periphery has come to be understood later. The proliferation of shopping centers, accounts for this transformation in time, space and society, as will be evident in this case.

Bogotá around the consumption

If we accept that the traditional public space has no longer a real social function, then the construction of identity has been absorbed by the private space. This process is manifested in the phenomenon of the Mall, which in contemporary times, is positioned as a space that emulsifies, blends and overlaps two variables in which the human being reaffirmed as being in community, these are: public space as a political fact and public space as a place of trade.

The Mall develops new identities in the city, proposing a way to approach a new contemporary public space, where the shopping centers meets the desire for self-consumption of postmodern society, Jencks (1986), and the innate human social interaction. All within a single spatial-physical unit.

These new temples of consumption have inserted into the everyday in a dialectical relationship, to organize people wishes. This affects, from social relationships to the patterns of growth, recovery and development of both its environment and its composition. The conceptual reasons and the real estate logics, have been translated into space, read and apprehended by its users, strengthening the pattern of consumption as a cultural identity.

The changes clearly framed within the structure of consumption, allow the shopping centers to have any "architectural style", and while maintaining an unchanged genetic, linked to the dynamics of consumption within a framework of comfort, the Mall develops the idea of mutation as a generator; a new identity. This is reflected not only in changes in its genetic code, but also by user demands, so that they adapt and evolve to meet a functional purpose in perpetuating the system of consumption. Thus, one understands the context of leaving a legacy for the lifting of the next element.

The public space, meeting point and hence the recognition of others, has ceased to exist. All the piazzas and markets are not as before, either by lack of ownership or because there are new instances and means that make it seem obsolete or dangerous. They have lost something of its character and private space absorbed activities and attitudes discarded by the first. Farther away these spaces, don't remove the need to interact intuitively with the other. This is where the Malls establish as a new opportunity to contact with "the other" and maintain the necessary tension to spice up the city.

Mutations in the city type and the switch between scales

It seems an inconsistency within an article about the city, to make a direct reference to a very small architectonic scale (the detail). Within the triad that we have mentioned we will refer to four shopping centers and their mutations. The requirement to switch between urban and detail scale is the result of mediation by the user. The level of detail of the facade, allows us to produce and to construct an identity for each shopping center and to show that every one of them is governed by a basic logic of emergency that responds logically to the evolution of the city. Showing the identities that "build" the shopping center is indeed a strange operation that only occurs like this in Bogotá and with Bogotá.

Urban Transforming Mutations (UTM)

In the 1970 Unicentro appears as the first Mall in the city of Bogotá. According to Reyna (2008), this building took its design from other Latin-American countries shopping centers but with special emphasis on the dynamics of the shopping centers in the United States. This Mall became the main component for the development of the city in the northern suburbs, modifying its surroundings. (See Figure 1). But what really identifies Unicentro? This commercial complex is a closed and compact mass, surrounded by a large parking lot (as all the outskirts shopping centers in the U.S.), so any relationship with the city is irrelevant.

It was placed with his "back" to the empty land that surrounded him. It was established as regulator of space and tensions with the rest of the city, especially with the traditional center from which he was moving away. Today, Unicentro is part of a network of fully consolidated city in which it appears to interfere in the least. This genetic and strategic location generated a territorial reorganization of its empty context; therefore, it created a new emergent city center in Bogotá since the city achievement delayed, to generate a new development that fostered a physical expansion of urban boundaries. In conclusion, in different historical moments, Unicentro generates an expansion and contraction of the city.

Plaza de las Americas Mall, in the 1990s, had a different implantation dynamic. Unlike Unicentro, which materialized as a closed building complex component of a fragment of the city, with the responsibility for promoting change and development in their immediate environment, Plaza de las Americas was designed trying to emulate the outdoor paths and squares of the city, all due to the implantation into a single-family housing sector that has become part of the southwestern outskirts of Bogotá. That is, while Unicentro is positioned as a new reference core of the city, Plaza de las Americas has to appeal to a correspondence of another core emotional reference. The singular thing is that, since its inception, the vicinity became a business support (complementary uses) to the building such as bars, restaurants; aesthetics and this promote a change in the housing typology. Clearly Plaza de las Americas had the same impact in generating a centrality in the city, as Unicentro did.

Bulevar Niza contrasts with the cases that we mentioned before, in the sense that it has had to react and therefore mutate from its core to adapt to the city. An important question arises. Why a Mall as Bulevar Niza, that proposed a similar solution to the Plaza de las Americas (open piazzas and walking paths) has not been as successful and has had to transform itself to adapt to the user's need. The conclusion is that for the moment Niza is being urbanized, it described itself as a model for the middle class suburb, Bulevar Niza, was introduced as part of that urban development, but its contiguous inhabitants didn't visited it. These residents could easily move to the consolidated Malls as Unicentro and Plaza de las Americas and therefore did.

Centro Mayor has a very relevant value as Bogotá's largest Mall. It is also the latest example that we have in this research, so the apprenticeship of the mistakes of other Malls is evident in its implementation. Centro Mayor makes a very interesting operation to change the idea of achieving a closed and isolated unit, as it achieves permeability; an essential characteristic for the city to integrate the public transport system and bring it inside the Mall (See Figure 2). Clearly, one of the conditions for a shopping center, which results in a good real estate business, is having a big access to the main streets and a strategic location to generate enough adherences. The interesting thing about the operation of Centro Mayor is to allow a Transmilenio's (4) pedestrian bridge that goes directly into the Mall. It is as if the facade has to be naturally closed, but the force of the user pierces it, to let the city penetrate the inner space of the Mall.

These cases show a list of mutations that have occurred at the city level, revealing the concepts that frame them, to understand why every Mall belongs to his implementation and no other. What defines the absolute dialectical relationship between the city and every Mall is the property to modify its urban, cultural and social context to promote the emergent centralities, in other terms, to promote the compact condition of the city instead a dilated one.

Formal Mutations of the Project (FMP)

Everything that we have said above is evident from an urban scale. When any of these four Malls were implemented, the city took time to assimilate and integrate them into its fabric. The commotion took time, and the city mutated. But what makes this diachronic and synchronic (5) observation interesting for the urban analysis and the architecture is to see both sides of the equation. The shock is reciprocal. First the city was evolving, now the Malls are adapting, mutating in response to what the user requires. These four Malls made the city, they are now remaking themselves.

Take the case of the physical changes of Unicentro. In recent years there were two changes. The first was to "refresh the envelope" of the complex, and the second is to raise a building intended for parking and offices in the upcoming years.

The point of this change of facades has nothing to do with the idea of what looks better or interesting. This mutation occurs like an upgrading of the building from a marketing and advertising approach, to promote a new symbolic image. It's the same strategy that the graphic designers use to recreate the logotype of a big traditional insurance company. Unicentro has an identity inserted so deep into the imagination of its frequent users that this change works for other purposes: on one hand, to promote the use (consumption) of the Mall by younger people, and on the other, to make a big call to real estate investors. So, this envelope change works in both ways. For internal and external purposes.

The last thing that should be highlighted about Unicentro and its physical mutations has to do with the office tower that will be raised in the future on one of the corners of the parking lot. The office tower will be the first program outside the closed complex, so, this building will be a contradiction of the nature of the project, a mutation.

The case of Plaza de las Americas is different from Unicentro. Since its inception, this Mall only thought about one chain store as the main attractive space surrounding the community. Due to changes in the dynamics of immediate use of the city, specifically talking about the change to multi-family housing, there was the need to attach a plot adjacent to its formal integrity to implement a cinema as an attractive program to diversify their range of attributes and attract different types of users.

Bulevar Niza has had large and constants mutations through its history in order to adapt to the demands of the users. The inner food court had to be closed and moved to the outer facades. It's highly symmetrical planning is almost imperceptible. Over time, the place intended for events was turned into restaurants and a chain store that now acts as an attractive factor for dwellers. In the future, it will suffer a change of envelope to correspond to what is considered a more modern design. (See Figure 3). This Mall is a synthesis of the mutations of the other two.

Finally, the physical elements of the Centro Mayor show a learning design with the pass of time. If we refer to the excesses of Augé (2003), it is understood that the size has implications beyond being a product of the learning outcome, as it also combines elements; it includes reflections of the traditional public space. The fact that one of its major concerns is the allocation of space and the re-creation of the public parks and piazzas, but in this case with artificial green areas, aims to consolidate congregational areas to replace outer public space.

This case supports the assumption that the Malls are the quintessential public space of postmodernism, as the result of the experience of his predecessors, gathered under the same roof, leading to the appropriation of this space by the users who do not need to move to another carriage to meet their needs and desires.

Final considerations

The Malls analyzed allow us to understand the new interactions between objects and subjects of study, the city, the Mall and the user. It seems that one of the conditions for any Mall in Bogotá to be successful has to do with the creation of identity. Each one of them has to use its land and logical evolution to be a step forward from the user. The mall has to absorb and cover activities of daily life by reaffirming his absolute potential as a centrality. Unquestionably, each occurrence of a new entity of

consumption and leisure appears in response to the apprenticeship of its previous model, but proposing new ways to attract more users, in other words, understanding the logic (the genetic) and the mutations (the strategic).

Notes

1. The word Mall comes from PallMall, a variation of the game of Croquet by Larry Ford (1994) in his book Cities and Buildings: Skyscrapers, Skid Rows, and Suburbs. The Mall refers to a type of commercial shopping center. For the purposes of this article we are referring the Mall and the shopping center as the same type of commercial building. The closed one.

2. According to the Oxford Dictionary. Mutation: from Latin mutatio(n-), from mutare 'to change'. Biol. the changing of the structure of a gene, resulting in a variant form which may be transmitted to subsequent generations.

3. Charles Jencks (1986) In his book What is postmodernism?, defines the contemporary society as a "(...) consumer culture with multiple tastes".

4. TransMilenio is the massive transportation system of Bogotá, opened in 2000. This system of articulated and bi-articulated buses moves along the city's exclusive ways and scheduled routes.

5. Based on the structuralistic concepts of Saussure, Fernand Braudel (1968) in The History and Social Sciences, proposed three elements that correspond to different analytical levels in units of time: The structure, situation and event. The historiographical levels can be read in a diachronic and synchronic way.

Bibliography

Augé M., Los "no lugares": Espacios del Anonimato, Gedisa. Barcelona, 1993.

Bauman Z., Vida de Consumo. FCE. Madrid, 2007.

Borja J., La ciudad Conquistada, Alianza Editorial S.A. Madrid, 2003.

Braudel F., La Historia y las Ciencias Sociales. Alianza Editorial S.A. Madrid, 1968.

Braudel F., The Wheels of Commerce (Civilization and Capitalism: 15th-18th Century - Vol. II). California: University of California Press. 1992.

Carrión F., Espacios Públicos y Contrucción Social: Hacia un ejercicio de ciudadanía. Ediciones SUR. Chile, 2007.

Ford L., Cities And Buildings: Skyscrapers, Skid Rows, and Suburbs. Baltimor and London, 1994.

Jencks C., What is Post-modernism?. St. Martin Press. New York, 1986.

Koolhaas R., La Ciudad Genérica, Gustavo Gili. Barcelona, 2006.

Perez J., Tropea, et al., La Seducción de la Opulencia: Publicidad, Moda y consumo. Paidos. Barcelona, 1992.

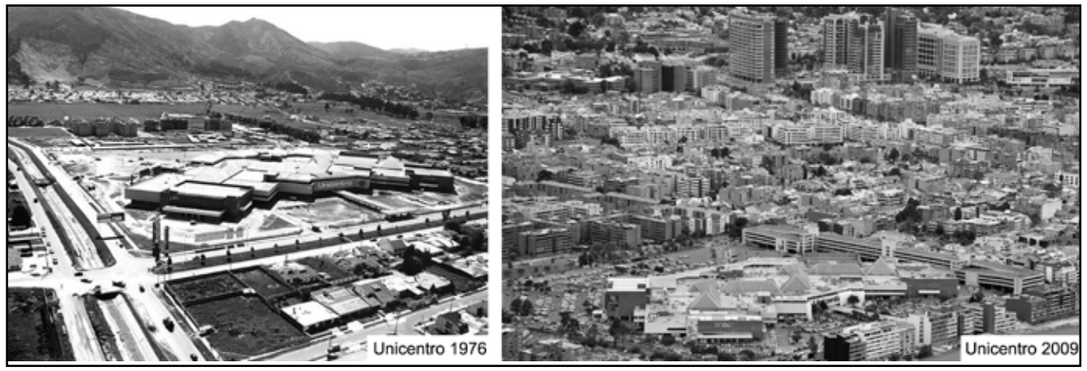
Reyna M., Pedro Gómez 40 años. Letra Arte Editores Ltda. Bogotá, 2008.

Legenda

Figure 1. The city, after and before Unicentro
This shopping center was built in the very northern limit of Bogotá.
Source: Author research photo file.

Figure 2. The connection between the Transmilenio and the Centro Mayor Mall.
This Mall connects its main entrance lobby to the Massive Public Transportation System of the City (Transmilenio), through the metallic bridge. The user can go from the bus to the mall, without touching the ground.
Source: Author.

Figure 3. One of the entrances of the Bulevar Niza (1990/2012).
This Mall mutates almost every year trying to redefine its own logics.
Source: Author research photo file.



Stefano Sabatino
Politecnico di Milano, Italy

Integration between infrastructural design and territorial planning

Case study of the third policy document Shaping the Netherlands. Architectural Policy 2001-2004

After many hurried and reckless decisions which damaged numerous landscapes in the last forty years, it seems more and more necessary to reformulate the relationships between infrastructural design, architectu-ral and landscape design.

Most of the contemporary European infrastructural landscapes can be referred to the 'Patchwork model' with which W. J. Neutelings describes the Randstad area as «urban fragments in a complex, non-spatial order, subjected to a shifting balance of political, economic, historical and cultural forces. This spatial chaos is an order of a higher complexity that permits a wealth of intense experiences, but also requires new instruments of planning» .

Perhaps an integrated and interdisciplinary infrastructural design could be a possible solution, but it requires a new approach, in which, on a conceptual and theoretical level, a rethinking of the terms of landscape and infrastructure, no more as conflicting realities, but as two cooperating elements of the complex system of na-tural and artificial territory networks, is necessary. Thus, landscape design and infrastructural design are two not separable fields which, integrated the one with the other, form the so-called 'plan on the land' .

The landscape and architectural approach is fundamental since it marks not only the infrastructural object but especially visual relationships, transitions, sequences among objects, infrastructures and landscape through a method integrating different scales in the infrastructural design, each one with its peculiar pro-blems.

The paper aims to analyze the virtuous case of Netherlands, in which, at least for twenty years, the conside-ration on the importance of the role of infrastructures in orienting transformation territorial processes, has been essential.

Compared with other European situations, Dutch urban planning tried to improve and apply its tools by wide-ning its interest field beyond historical town and consolidated suburbs and working out models that gave a recognizable morphological rearrangement to the widespread city.

The purpose is finding new theoretical and design formula able to recompose the occured separation betwe-en built and open space design and connection network, limited to a traffic regulation system.

Studies and researches carried out in Netherlands are those which tried in a more convincing way to give back the road its morphological reference role also in a territorial scale, as it was in the traditional town in which the road system was the real framework of urban space, establishing its built and open spaces hierar-chies. Therefore the infrastructure is the possible ordering element which can give a meaning to the undiffe-rentiated settlement material produced by city sprawl and which seems incomprehensible, disorienting and devoid of structural links.

In 2000, four ministries developed a strategic plan called Shaping the Netherlands. Architectural Policy 2001-2004 whose primary goal was to give a concrete contribution to the Netherlands architectural and spatial quality.

This plan is part of an urban policy scheme which started in Netherlands in 1991, with the aim to involve pu-blic opinion in urban transformation topics about architecture, landscape and infrastructures. The document introduces the idea that a city and architecture are intrinsically public affairs which require a more widespre-ad debate and a contribution of different disciplines.

In that document the main tool is made up by Great Projects, experimental guide-projects related to issues of fundamental importance for the transformation of the Dutch territory. Among these issues there was a spatial transformation design of an existing motorway, the A12, between The Haag and the German border. This infrastructure is a sort of crossing section of Netherlands, since it gives a good part of Dutch landscape va-rieties back: widespread urban areas and agricultural spaces, industrial districts and national parks, consoli-dated towns and polders.

In order to overcome sectorial visions, the ministries have involved external consultants of different discipli-nary areas in the research work, as they considered that a motorway transformation design couldn't revolve only on the built object but should be a long term territorial planning tool.

In this sense it is interesting to compare the three experimental projects came out of the research, designed by Post L30 Designers (landscape), Monolab Architects (architecture) and MUST (urban planning).

The A12 motorway was characterized by an absolute lack of phisical, visual and functional relationships with crossed landscapes and it was congested and unable to put up with the growing car traffic.

Monolab Architects identify two fundamental topics through which it is possibile to think a new scenario for the development of infrastructural systems: the distinction of traffics and the time as a variable for the pro-ject. The idea is to separate national and regional crossing flowes through an addition of carriageways in or-der to create a double speed system. The central part of this new cross section is reserved to freeways for quick and long connections with a limited number of link nodes; the new carriageways, called 'parallel system', put side by side the freeway system and have several accesses and exit points that link the motor-way to sorrounding areas. This layout can be modified in a more complex system consequently to the tran-sformation of contiguous areas; new elements, connection ramps called 'flippers', will link in a horizontal and vertical way the motorway to the sorroundings. The areas with a strong concentration of vertical flippers could become a space of enormous potentiality for new fuctions located in a structure named Infra-Deck, a sort of infrastructure-bridge. Monolab Architects, conscious about the impossibility to achieve a well-defined project, design a flexible system that adapts itself to the crossed contexts specificity. They pick out along the infrastructure nine different areas – six urban and three natural – characterized by a peculiar identity that the project wants to reinforce on the basis of four thematic fields: soil, landscape, urban development, infrastruc-ture. Depending on crossed area the infrastructural model gives a proposal of spatial re-organization: for e-xample, in the Randstad area, it becomes the support for a territorial development characterized by an en-clave structure in which green and built areas are alternated and interconnected by the parallel system.

In The Haag area, the necessity to have a link with the existent infrastructure leads to transform the A12 into a multilayer system, named 'Infradelta', which combines the A12, A4, A13 motorways. Near Zoetermeer and Utrecht a higher density of urban settlement allows to propose the Infra-Deck system which grants the connection between areas cutted by the infrastructure and the creation of new territorial and urban centralities, with parking, interchange transport nodes, services and commercial activities.

MUST proposal starts from a reflection about the inevitability of a progressive urbanization of the motorway because this is, in their opinion, congenital in infrastructural system evolution; they claim this absorption pro-cess of infrastructure in urban fabric is already begun, as it happened, for instance, for the A10 in Amster-dam. The project along the motorway is an urbanization strategy that wants to underline the necessity of an urban networks integration. In a network system, the solution can not be the enlargement of the street; it could be more convenient to intervene on a local infrastructure network improvement. As in Monolab Archi-tects project, the MUST proposal starts with a qualitative analysis of motorway crossed areas, by the identification of eight different territorial typologies. Then, the architects pick out four main design strategies, named 'Network Strategy', which specify four ways of contact between network and urbanity: removal, disjointed-ness, weaving, integration. The application of these strategies for each territorial typology transforms the in-frastructural design in a more general spatial re-organization: the goal of this project is to define hypothetical guide lines for urban systems development in which the motorway becomes the backbone of a new territorial framework. From a methodological point of view, MUST project is a really interesting model of infrastructural design as a transformation action of urban regeneration able to give a new shape to the territory.

Post-L30 office identifies the traffic congestion as the central problem of Dutch infrastructures, developing a strategy with the aim to modify the transports system by the application of a so-called 'deconstructive pro-cess'. Time has a fundamental role in this project: the principle is to minimize travelling time on the motor-way, separating really necessary time for the movement to the one lost for the traffic. This lost time could be made up to introduce Transfer Zones along the A12: these areas are a sort of "meeting point" in which dri-vers can go into, waiting for better traffic conditions. Transfer zones are designed as complex spaces - ac-cessible from the motorway and from sorrounding urban territories - with several functions such as intermo-dal stations which give the possibility to introduce positive competition between public and private transports system, productive and commercial spaces, leisure facilities. Transfer zone works like an interface between city and infrastructure and it allows the A12 to be linked to local roads system and to reinforce its role as a regional scale structural axis. As in the other projects explained before, Post-L30 office proposes a differen-tation strategy of the A12 track stretches, in relation to affected landscapes: in this way the motorway can assume a urban boulevard, panoramic road or a simply connection form.

From a comparison between these three projects it is possible to identify some common topics and direc-tions which could form a useful methodological set for an infrastructural project more integrated with inter-cepted landscapes.

Infrastructural building site-specific typology

The definition of the reference territorial areas of interest is the preliminary phase to the infrastructural design and it arises from the individuation of homogeneous geomorphological features to the analysis of more spe-cific conditions on the basis of which the infrastructural object can be modelled.
This modelling can not be limited to a tunnel, viaduct or rise configuration set out by the altimetric lie of the land, but it needs to be extended to a more complex interpretation of relationships between infrastructure and crossed contexts.

The first thinkings in the earlier steps of the design process, as Gerdo Aquino, president of SWA Los Ange-les studio, says «is about trying to find what is the dominant system in any landscape (rural, urban or subur-ban) that can act as an efficient network for making things better» .

In the three explained projects, and especially in Monolab and MUST proposals, the landscapes are seen and divided according to their characteristics but yet directed in a design viewpoint: relevant lansdcapes such as polder areas in the east of Gouda, the Heuvelrug hill, covered by forests and the Veluwe national park; interstices between green fragments and urban settlements in the included area between The Hague and Gouda; more densely urbanized areas such as Zoetermeer and Utrecht.

Such different areas can not have the same motorway and, thus, the serial character of the built object – of-ten exclusively dependent from technical matters – is replaced by a sort of typological abacus that allows a more articulated and flexible configuration of the various stretches of road, drawn from a qualitative analysis of different landscapes.

Areas of contiguity and intersection between road routes and the heterogeneous territorial materials are cru-cial spots in which the architectural and landscape design may structure a new plan by different relationships with urban settlements, existent infrastructures, peripherical areas, agricultural spaces, extremely paramount landscape elements.
The abacus is a projectual tool that forms an order board in which the rule and the architectural composition are relating to the single context specificity though holding an overall unitariness of the projectual interven-tion through well identifiable invariants of materic-formal kind, able to raise the infrastructure as a reference and orientation element in the landscape.

Rootedness of the built infrastructural object

In order to have an interaction between infrastructures and the specific terriories, a strategy of transversal insertions offers likely options of rootedness compared with the indifference with which linear road routes cross through different kinds of settlements; in this way we have a system of sequences which supplements the longitudinal one - based on quick connection between distant points – and which establishes a new structure of the territorial public space. Therefore the transversality is a strategic action in which the architec-tural and urban design is called to intervene in a specific way by different convenient compositional opera-tions giving shape and recognizability to infrastructural territories.

In the explained projects, the local scale transversal rootedness of the main infrastructural axis is clear, even though in different ways: in Monolab project this takes place by the parallel system, placed on the two sides of quick connection carriageways, that allows to insert the motorway in the local system by flippers-ramps. Moreover, the Infra-Decks, with their bridge structure, anchoring to the ground, serve as re-establishing and connection elements between separated urban parts.
In MUST project it is the Network System linked to the A12 motorway that gives a new recognizable structu-re to the territory by an intermedial net that models itself according to the intercepted contexts specificity.

In Post L-30 proposal the transversal rootedness is designed through Transfer Zones which enlarge the mo-torway depth, strengthening it as a linear element that structures the territory and creating a new infrastructu-ral landscape image, a sort of intermedial city between the great networks system and the sprawl city.

Even though these projects have understandably different directions arising from their disciplinary specificity, however it is possible to catch a complementariness between the three proposals and it is not difficult to i-magine an unitary project which integrates the three solutions.

MUST proposal wants to direct the urban settlement processes along the motorway, working on a strategic level of territorial scale; the one of Post L-30 – through a sequence of transversal areas – aims to give a new structure to territorial public space, which modifies customs and living ways of the A12 users, while Monolab project prefigures also in spatial shapes the new infrastructural landscape of the A12, by an increase in ele-vation of the built object depth.

Here the problematic relationship between infrastructures and landscape is no more approached in terms of compatibility, as two systems which can not seemingly communicate each other, but in terms of integration and interconnection, such as a chemical reaction: the infrastructure can be understood like a "reagent" which, in contact with different kind of contexts, produces new and different scenarios, "reaction products" which can give answers to the undifferentiated ways with which infrastructures cross landscapes.
Intervening on landscape means to act in a continuous development process as «landscapes cannot be de-signed and controlled as a totality; they are instead scripted as scenarios projected into the future, allowed to grow in and evolve over time».

Therefore the projects here presented are perfectly integrated in the Landscape Urbanism approach – within which «landscape architects are embracing change and designing landscapes that anticipate a succession of states. […] The designer create the conditions under which entirely different and perhaps unanticipated spatial characteristics may emerge from the interplay between designed elements and the future life of the site» – and they propose interesting solutions which, even if remained in a theoretical project, controvert the opinion of Stan Allen, ac

cording to which the Landscape Urbanism has had a limited strenght to verify its views .
The third policy document Shaping the Netherlands is an effective example of experimental tool developed in order to find possibile solutions concerned the future structure of the whole anthropic environment, putting in the middle the design culture – sharpened through an active relationship between various disciplines – and bringing publicly the debate on territorial transformations and the research on architectural and infra-structural design, often closed within the academic world.

This tool has been the concrete response to a critic of a state of affairs, oriented to pinpoint some problems of the design disciplines: the weak rootedness of architecture in contemporary society, the little forceful of the project in large scale plans, its low boldness and vision in prefiguring an overall project and the gap be-tween the world of culture and the construction world.

Another really important topic in the document is the relationship between transformation and memory, here seen as landscape inscribed material culture, clear sign of the ways with which Dutch people have lived and modified their problematic territory. Although the well known Netherlands changing culture and its continued opening to new paradigms, both in architectural and urban design, there is awareness about the necessity of finding a balance between tran-sformation needs set by new society claims for mobility, by new widespread ways with which it uses the terri-tory, and the attention for the improvement of the extraordinary Dutch anthropic landscape features.

In order to achieve this balance, it is necessary to involve more plaintiffs in decisional processes; the docu-ment fosters cooperative initiatives among purchasers, political authorities, universities, design professions, public opinion, by promoting debates and competitions which may cause new ideas and solutions to come out looking at the infrastructural design in a renewed way. The Dutch case shows us the reductiveness of thinking to an infrastructural project only in an insertion point of view since it presumes that the aim of the design intervention is not modifying the existent condition in substantial way; a new infrastructural layout design has a relevant importance on its sorroundings, which le-ads to the shaping of an another, new and different landscape that needs to be designed.

Notes

[1] W. J. Neutelings, Fragmentatie in de periferie: de 'tapijtmetropool', in «Archis», march 1990
[2] C. Magnani e P.A. Val, Notes for a taxonomy, and B. Secchi, The depth of the road, in «Casabella», n. 553-554, 1989
[3] Interview of Nam Henderson to Gerdo Aquino, What is a park - Landscape or Infrastructure, in "Archinect" website, Editorial & News, Features. http://archinect.com/
[4] S. Allen, Beyond Landscape Urbanism, in «Lotus», n. 139, 2009
[5] Ibidem
[6] In Beyond Landscape Urbanism Allen says: «To date the significant projects of landscape urbanism have been urban parks; the city itself has remained untouched. Landscape urbanism has yet to propose tools to deal with dense urban conditions, or to effectively integrate architecture and infrastructure».

Legenda

1. Motorway as a new metropolitan centrality.
Monolab Architects project: Infra Deck Utrecht

2. Spatial prefiguration of the new artificial ground.
Monolab Architects project: Infra Deck Utrecht

3. Different strategies of territorial scale.
MUST project: The whole layout of the A12 motorway

4. Motorway as a new backbone of the territory.
Post L-30 project: The Transfer Zone along the A12

Bibliography

AA.VV., Mobility. A room with a view, Nai Publisher, Rotterdam, 2003

Allen S., Beyond Landscape Urbanism, in «Lotus», n. 139, 2009

Baart T., Markerink C., Metz T., Snelweg. Highways in the Netherlands, Lakerveld, Den Haag, 1996

Caputo P., Nava L. (a cura di), Deltametropolis. Progettare la metropoli d'Olanda, Libreria Clup, Milano,2005

Clementi A., Pavia R., Territori e spazi delle infrastrutture, Transeuropa, Ancona, 1998

Gausa M., Repensando la movilidad, in «Quaderns», n. 218, 1997

Graafland A., Cities in transition, 010 Publishers, Rotterdam, 2001

Hung Y. Y., Landscape infrastructure: case studies by SWA, Birkhäuser, Basilea, 2011

Ingersoll R., Sprawl Town, Meltemi, Roma, 2004

Magnani C. e Val P.A., Notes for a taxonomy, in «Casabella», n. 553-554, 1989

Nicolin P., Landscapes and Infrastructures, in «Lotus», n. 139, 2009

Ponticelli L., Micheletti C. (a cura di), Nuove infrastrutture per nuovi paesaggi, Skira, Milano, 2003

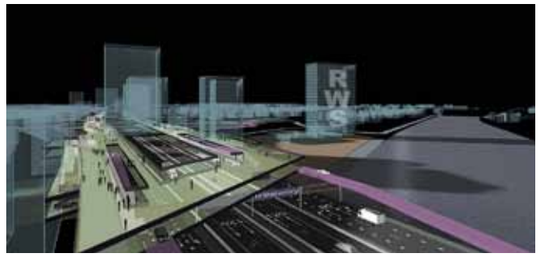
Repishti F., Excavation and Superimposition, in «Lotus», n. 139, 2009

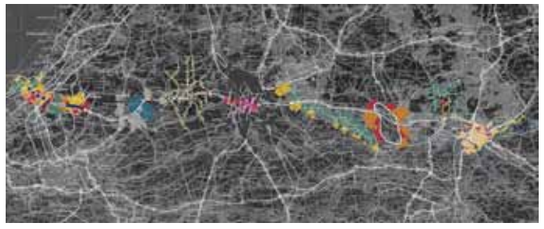
Secchi B. (a cura di), On mobility: infrastrutture per la mobilità e costruzione del territorio metropolitano: linee guida per un progetto integrato, Marsilio, Venezia, 2010

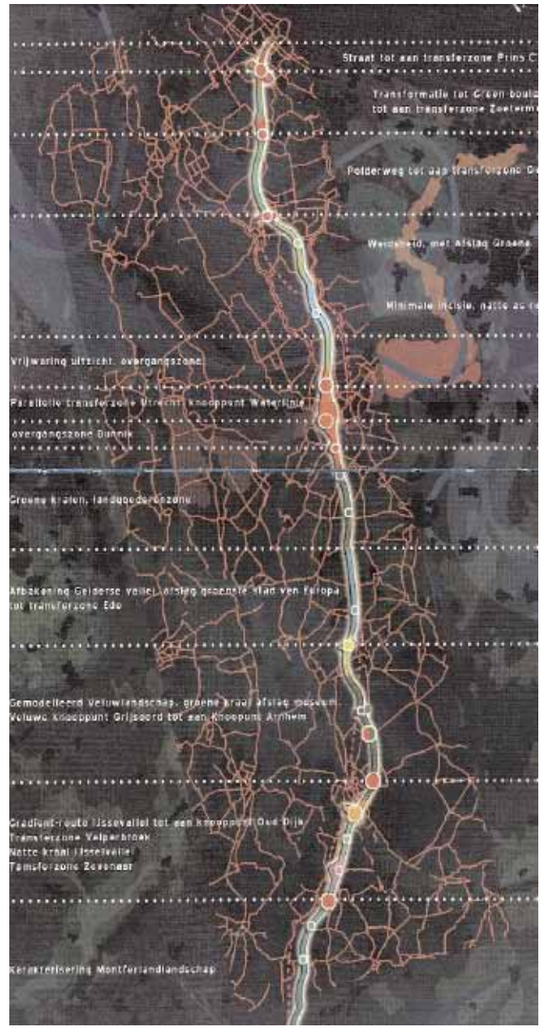
Secchi B., The depth of the road, in «Casabella», n. 553-554, 1989

Shannon K., Smets M., The landscape of contemporary infrastructure, Nai Publisher, Rotterdam, 2010

Xaveer de Geyter Architects, After-Sprawl, Nai Publisher, Rotterdam, 2002







Maurizio Sabini
Drury University, MI, USA

Infrastructure and the Just City

If it is true, as David Harvey put it, that "the right to the city is far more than the individual liberty to access urban resources [and] it is a right to change ourselves by changing the city,"[1] it is also true that we need to make sure that such accessibility to urban resources is in place as a precondition for any process of change to occur. Accessibility to urban resources comes through infrastructure and a strong infrastructural system is in everybody's interest, as it creates the necessary platform for change.

An efficient city, or a city that, through an articulated infrastructural system, can offer more opportunities to its residents and visitors, is also an attractive city, with a higher quality of life, and a higher level of satisfaction among its residents. Infrastructure therefore benefits all residents and meets the goals of the public good.
How can architects and urban designers, outside of the fields of planning and engineering, contribute to this effort? Firstly, by understanding the importance and the social relevance of infrastructure to shape better cities and metro regions, in the best interest of everyone, the less wealthy or less powerful first and foremost. Secondly, by approaching the design of infrastructure in a comprehensive, holistic way, one that goes beyond mere engineering.

Infrastructure as a Platform for a Just City Understanding the importance and the social relevance of infrastructure to shape better cities and metro regions leads also to appreciate how infrastructure creates the conditions for a more just city: a city where everyone has the right to a good urban experience. Infrastructure alone does not make a city more just, but there is no just city without good infrastructure.

As Giandomenico Amendola has stated, the city is "the cradle for democracy."[2] At the very dawn of Western civilization, the Greek polis was the laboratory of democracy as we know it. A democratic city is one where all its residents have equal opportunities to benefit from the city assets and to participate through representative governance in shaping the identity and the destiny of the city. Thus a democratic city is a pre-requisite for a just city. City assets (such as mobility systems, water and energy, as well as public spaces, amenities and facilities) need to be accessible and affordable. Infrastructure is necessary to achieve both goals. On the other hand, equal opportunities are not sufficient to create the conditions for a just city. The quality of the urban experience is also critical, as it should be high for all.

A just city is a city where its citizens participate in its envisioning and governance. To do this, communication must be ensured among the city administration, neighborhood associations and development corporations, civic associations, and non-profit organizations, operating at various levels on a variety of projects and initiatives. (Fig. 1)

A just city is also a city, however, where people, by having opportunities to be heard, to propose and instigate change, to access public assets and information, feel empowered. As the information network expands and the communication flow increases, the involvement of people will increasingly extend also to discussions relative to new infrastructure that will be required for growing cities and urbanized areas necessary to address more complex and environmentally impactful operations.

As Neuman and Smith have noted:
The networking of society is in debt to the capital invested in networking infrastructures, which have recast relations among peoples, institutions, and places. While social, political, administrative, and economic forces also have played key roles in the transformation of urban space, the transformation of social space in general and urban space in particular is partly due to the transformation of infrastructure, and the transformative power of infrastructure.[3]
A few examples of the role of infrastructure in making the city more just will now be discussed.

Mobility for All As Richard Sommer pointed out: "In societies aspiring toward modern forms of democracy, increasing mobility – in both geographic and socio-economic terms – has become as critical to human emancipation as the more traditional touchstones of civil liberty and equal representation." [4]

Some cities in South America have shown how smart infrastructural interventions can achieve the ambitious, but simply just, goal of mobility for all and, in so doing, increase safety on the streets and public spaces, as well as cultural identity, neighborhood pride, social engagement, socio-economic growth and political participation. For example, the cable metro system (Cable Propelled Transit or CPT) in Medellin (Colombia), Caracas (Venezuela), and, more recently, Rio de Janeiro (Brazil), better known as "gondola system", has proved to be a cost-effective and environmentally low-impact infrastructure to address the mobility gap between the rich and the poor.

A few years prior the Urban-Think Tank envisioned system in Caracas (celebrated by the 2010 MoMA exhibition Small Scale, Big Change[5]), the city of Medellin was the first metropolis in Latin America to implement a fully-integrated CPT system. Meant to serve primarily the impoverished and dangerous barrio of Santo Domingo, a poor neighborhood that twenty years ago was plagued by high levels of violence[6], in the early 2000's, after some years of studies, community discussions and social engagement, the world's first CPT system was realized after the national and the local government raised the 26 million US dollars necessary for its realization. The system took almost five years to open, but it was a great success. Criminality levels remarkably dropped while the economy of the neighborhood grew significantly. In four years since the opening of the first line, crime almost disappeared, jobs increased 300% and three banks opened along the route. (Fig. 2)

Bundling Mobility, Green Space and More In Rio de Janeiro (Brazil), in a poor neighborhood like the one in Medellin, the Manguinhos District, a different kind of intervention is being experimented, this time by modifying an existing infrastructure.

It is estimated that roughly 20% of Rio population, some one million inhabitants, live in more than five hundred favelas. On one hand these large informal settlements are characterized by poverty, criminality, and lack of basic infrastructure, on the other hand they continue to grow at an explosive rate and they do offer basic shelter to a large number of people that cannot simply be relocated.

Architect Jorge Mario Jauregui and his Rio based firm Metropolis Projectos Urbanos, asked by the city in 2005 to come up with a proposal for the Manguinhos District, developed an ingenious idea: elevating for 2.4 km (a mile and a half) a section of the existing railway line, adjacent to Rua Leopoldo Bulhões (also known as "Death Avenue" for its crime rate), to create a linear park underneath. "It was a notion inspired by Rio's Parque do Flamengo, designed by [Brazilian master landscape designer] Roberto Burle Marx in 1961 to be a place for relaxation, leisure pursuits, sports, and cultural events – [as Burle Marx put it] a 'democratic space'…"[7] Athletic fields, bike paths, and new access stations to the line above will be part of the new park, where it is hoped that the people of the favelas, once imploded in their closed social groups in fear and social disengagement, will come together in a safer and more enjoyable way, thus exercising their right to their city (Fig. 3).

Re-purposing Infrastructure The reconversion of the High-Line in New York of an abandoned railway line into a new linear park that, by weaving through, and interacting with, the city fabric offers a whole new park experience for Manhattan's residents and visitors, is well known. Another example of re-purposing an abandoned infrastructure, at a much larger scale (22 miles / 35 km vs the 1.5 miles / 2.3 km of the High Line), is the Green Belt in Atlanta. The intervention, still in the works, consists of creating a linear park surrounding the city, intertwined with bike-paths, trails, learning centers, and other recreational facilities, on the right-ofway of a former rail line. This new infrastructure not only will provide a new amenity to be shared by the inner city and the suburbs, but will also give a new definition to the urban structure (of a "centerless city", as Rem Koolhaas defined Atlanta already in the mid-1990s), thus helping the process of city identity building.

The 23 billion US dollars project aims at creating a ring of bundled infrastructure about three miles from Atlanta's business district. The Beltline will include a neighborhood transit system (part of the MOBILITY 2030 plan by the Atlanta Regional Commission) and the redevelopment of over 2,500 acres. More importantly, by supporting "smart growth" strategies and new housing developments (for all income levels), the Beltline has been a catalyst for people's involvement in the urban planning and re-envisioning process, thus sustaining the growth of a more just city.[8]

Other examples of re-purposing infrastructure are also the recent projects for the Parc Lineal La Sagrera in Barcelona by West[9] et al. (2011) and the Bloomingdale Trail in Northwest Chicago, announced by the city new mayor Rahm Emmanuel.
These examples of re-purposing infrastructure not only offer a new level of accessing the assets of the city for all, but they also contribute to capture, celebrate and grow the collective memory of the city.

Infrastructure and Quality of Life One of the clearest examples of an infrastructural system that has significantly changed the life of a city and of its people is Curitiba (Brazil). The city has become over the recent decades almost a poster child of intelligent planning (in 2010 it has been recognized with the Globe Sustainable City Award 20109).

Inspired by architect-mayor Jaime Lerner, who led the city for twelve years between 1971 and 1992, Curitiba's intelligent planning did not see infrastructure in isolation, as mere engineering, rather as the foundation of an integrated system of urban functions and services.
The highlight of Curitiba's infrastructure is its transportation network, centered on a model Bus Rapid Transit (BRT) system. The buses run frequently—some as often as every 90 seconds—and reliably, thus making Curitiba's BRT one of the most heavily used, yet low-cost, transit systems in the world. Around 70 percent of Curitiba's commuters use the BRT to travel to work, resulting in congestion-free streets and
pollution-free air for the 2.2 million inhabitants of the greater metro area.[10] (Fig. 4)

The popularity of Curitiba's BRT has induced a cultural change from automobile travel to bus travel.
Based on the results of a 1991 traveler survey, it was estimated that the introduction of the BRT had caused a reduction of about 27 million auto trips per year, saving about 27 million liters of fuel annually, as 28 percent of BRT riders previously traveled by car. The quality of the infrastructure network of Curitiba has reached such a level that the functioning of the city itself has become a tourist attraction.[11] It boosted business and helped position the city on the global market.
It is also clear how these interventions were conceived within a wider strategy aimed primarily at improving the people's quality of life. And the people responded very positively to that effort: reportedly, an impressive 99% of Curitiba's inhabitants want to live in their city.[12] Such a strong sense of belonging is one of the necessary goals for the right to the city to be fully exercised.

Infrastructure Beyond Engineering

The new and demanded functionality of infrastructure, beyond the mere engineering of a specific solution to an isolated problem, seems to encompass now social, cultural and esthetic criteria, thus requiring a more holistic design approach. Infrastructure becomes a work of architecture, which in turns expands its supposed disciplinary limits beyond the building-object, to achieve a more comprehensive, cultural and technical mission for the betterment of the physical environment.

More recently, moving from similar premises, a projective approach that leverages on people's new demand for a re-appropriation of urban spaces is suggesting what has been called "user-generated urbanism". The work of firms, agencies and organizations, such as the San Francisco based group Rebar ("an interdisciplinary studio operating at the intersection of art, design and activism"[13]), is particularly representative of a wider movement in architecture and design, aiming at facilitating such experiences.[14]

In addition, also renowned larger firms such as BIG, besides working on large commissions world-wide, have started to pay closer attention to "the public city," especially with regard to infrastructure. BIG's projects such as Superkilen (2007) in Copenhagen, and Slussen (2007-08 – Fig. 5) and Stockholmsporten (2011) in Stockholm are clear examples of what Bjarke Ingels himself calls "social infrastructure": a new way of conceiving infrastructure (a street cum market, an urban crossroads and a highway interchange, respectively) beyond engineering, as an opportunity to enrich the public realm.

Thus, whether it is designing for tactics of re-appropriation of the public space, or for enhancing and enriching the public experience of the city, there seems to be a new concern for what has been called a "just city", which is not a given, as the city is indeed a political arena. As Loren King has noted: "A just city would surely demand transformations – of attitudes, preferences, and legal structures of ownership and entitlement [as well as of its physical environment, I would add] – that would count as controversial to entrenched interests." [15]

What these more recent design experimentations seem to suggest though is that such a striving for a just city, or for the right to the city, is more than a general declaration (of social struggle), but rather a more pragmatic demand for specific kinds of cities, addressing people's needs and their claim to be part of the process of change.

Through people's involvement in the process of change, the demand for new ways of urban socialization emerges, also through a new way of looking at infrastructures. Henri Lefebvre's well-known thesis (1970) that "the right to the city" is also "the right to transform the city" has been further elaborated more recently by Peter Marcuse by arguing that it also a right "to determine what [kind of city] is produced and how it is produced and to participate in its production." [16] If some of the most impactful transformations on a city take place on its infrastructure, than there would be no better ground than infrastructure where to exercise the right to the city. [17] If these processes of involvement contribute to make the city more just, strengthening and improving the city infrastructure means also sustaining such processes for a better urban life.

Notes

[1] David Harvey (2008): 23. See also the more recent: Brenner, Neil et. al. (2012).
[2] Giandomenico Amendola (2010): 119 – my translation.
[3] Michael Neuman and Sheri Smith (2010): 22.
[4] Richard Sommer, Mobility, Infrastructure, and Society, in Mostafavi (2010), 380-381: 380.
[5] See Lepik A., Small Scale Big Change. New Architectures of Social Engagement, New York: MoMA
2010.
[6] "A resident of Santo Domingo could expect to spend 2 to 2.5 hours commuting to work in the city core
each way. Pablo Escobar, the most violent and successful drug lord the world's ever seen, would've
drawn many of his 'troops' from this area. … Residents wouldn't leave their homes after dark as the threat
of incident wasn't just possible, it was likely. Police, even, wouldn't dare to enter Santo Domingo." Dale,
Steven. The Gondola Project, four parts, 11-15 March 2010,
http://gondolaproject.com/2010/03/11/medellincaracas-part-2/ (accessed 9 April 2011).
[7] Ibid.
[8] http://www.beltline.org/
[9] The city of Curitiba was awarded in 2011 for "excellent sustainable urban development."
http://www.globeaward.org (accessed 8 April 2011).
[10] Joseph Goodman et al., Curitiba's Bus System is Model for Rapid Transit, in Race, Poverty & the Environment, 75-76, (winter 2005/2006), excerpted from a publication on Issues in Bus Rapid Transit by the Federal Transit Administration, US Dept of Transportation. http://www.fta.dot.gov/7692_ENG_HTML.htm
[11] Ibid.
[12] http://www.citiesforpeople.net/cities/curitiba.html (accessed April 23, 2011).
[13] From Rebar's web-site: http://rebargroup.org/ (accessed April 23, 2011).
[14] See: Rebar, User-Generated Urbanism, in Mostafavi (2010): 350-355.
[15] Loren King, Public Reason and the Just City, in Rile Hayward & Sawnstrom (2011): 59-80 (75).
[16] Peter Marcuse, Whose Right(s) to What City?, in Brenner et al. (2012), 24-41 (36).
[17] See Henri Lefebvre (1970; 2003).

Image Captions

Figure 1. "Listening to the City" town hall meeting, Javits Center, New York, July 20 & 22, 2002. © Civic Alliance. http://www.civic-alliance.org/ (accessed 15 September 2011).

Figure 2. Metrocable, Medellin (Colombia). Photo: © Steven Dale. http://gondolaproject.com/2010/04/06/eyes-on-the-street/ (accessed 15 September 2011).

Figure 3. Parque Manguinhos, Rio de Janeiro. © Jorge Mario Jauregui – Metropolis Projectos Urbanos

Figure 4. BRT system, Curitiba (Brazil).
http://nexus.umn.edu/Courses/Cases/CE5212/F2008/CS3/CS3.html (accessed 22 April 2011).

Figure 5. BIG, Slussen, masterplan, Stockholm, 2007-08. © Bjarke Ingels Group. Projects 2001-2010, Design Media Publishing Ltd., Hong Kong, 2010: 186.

Bibliography

Amendola G., Tra Dedalo e Icaro. La nuova domanda di citta' [Between Daedalus and Icarus. The New Demand for the City], Laterza, Rome-Bari (Italy), 2010.

Brenner N., Marcuse P., & Mayer M. (eds.), Cities for People, Not for Profit. Critical Urban Theory and the Right to the City, Routledge, New York, 2012.

Brown H., "Infrastructural Ecologies: Principles for Post-Industrial Public Works," The Design Observer Group, posted 25 October 2010, http://places.designobserver.com/entry.html?entry=15568

Harvey D., The Right to the City, «New Left Review», n. 53, September-October, 2008: 23-40.

Lefebvre H., La revolution urbaine, Gallimard, Paris 1970; Bononno R. (trans.), The Urban Revolution, foreword by Neil Smith, University of Minnesota Press, Minneapolis, MN (USA) and London, 2003.

Mostafavi M., with Doherty G., Ecological Urbanism, Harvard University Graduate School of Design and Lars Müller Publishers, Baden (Switzerland), 2010: 380-81.

Neuman M. and Smith S. City Planning and Infrastructure: Once and Future Partners, «Journal of Planning History», n. 9(1), 2010: 21-42.

Pollalis S. et al., Infrastructure Sustainability and Design, Routledge, New York, 2012.

Rile Hayward C. & Sawnstrom T. (eds.), Justice and the American Metropolis, University of Minnesota Press, Minneapolis MN (USA), 2011.

Shannon K. & Smets M., The Landscape of Contemporary Infrastructure, NAi Publishers, Rotterdam, 2010.

Veronica Salomone
Universita' degli Studi "G.d'Annunzio" Chieti e Pescara, Italy

Landscapes of survival: the OASIS system in the contemporary Mediterranean city

Landscapes of survival accompany the continuous town's evolution in its steady adaptation to new living conditions, exploiting the precarious balance due to the natural sources and rigid social systems abuse. They are the Gilles Clément's unpredictable and inconstant landscapes "evolving in the biological dependence, […] not obeying to any program, […] but to environmental adaptation needs". They hang in balance between what they are and what they would become, constantly shaping, till they get the transformation. They come from the conflict, the need and the change. Those landscapes are "structures in movement with the will to turn into another structure" 1 as Pier Paolo Pasolini would say.
Living in instability is an issue contemporary architecture is now facing, even more frequently. The changes involving the environmental, social and economic fields are affecting towns leading to more complex and fouled settings.
In a world where wealth and matter storage characterizes the global space, we need to find limits to poverty in order to plan development.2 These limits help us keeping a constant balance between the natural and human environment; that's what we call landscape.

"*Landscape has changed its meaning over the years until it turns out to be, nowadays, the whole prints left by the various communities and individuals sharing the same area. It overlaps that prints left by its physical genesis and those equals to the changes the living community ignore. So it's a print whole codified by the meaning system; landscape would represent the prints corresponding to the relations block seen as perceptible signals of life: that is relations developing between individuals from the same community, from different communities, between different communities and between all of them and the whole area; it's a kind of relations leading to a survivor effort, a process aiming at the community survival, a protective act by the previous generations for the following ones.*" 3

Landscapes of survival belong to the nomadic society dwelling through various places.
Being the place allows the landscape existence in a widened area.4 Language match up information, tools are small and practical. The nomadic lives on his trips and displacements, he lives through boundaries not belonging to any territory but each part of it. The oasis border is an ever changing limit. In its depth coexist different activities and materials. As a shelter for the nomadic, oases become a waiting and living space.
The survivor ideal deals with the man's limit need in those places, in order to set an edge to survival and to build up some landmark. Men crossing the desert need a shelter; the nomadic resides, he doesn't inhabit.
Oasis are a precarious and complex living system and so a kind of survivor. It comes from a wise use of natural sources, through traditional hydraulic and settlement techniques. Palm trees are a building and water supplying material. It is based on social relations networks in a constant balance prevailing against urban environment, deeply marking its organization. It's a system that consists of space gaps becoming a building part of it where collective prayers and handicraft activities share the same place. Craftsmen shape the matter through earth, straw and natural mortar mixing processes; the volumes painted white draw the void whereas nature and device meet. In those places tribes and populations join in the building/maintenance act of the OASIS system, gaining personal spots, inseparable from the whole community.
The link that joins these two elements is water. From the main source, the narrow canals network seems to branch out through refined hydraulic patterns in an intricate maze, so that personal needs meet the community ones. Water is life, water is harvest, and water is survivor. It represents the limit that allows production and life. The canals are managed in order to let water get each point, at a given time. Its presence marks the place identity, and makes the urban system self-sufficient.
The social issue is closely linked to the place ideal, because society assigns it a living suitability. The places chosen by communities are more related to immateriality and instability, rather than permanence.

New nomads live in the everyday landscapes of survival, in the socio-economic cultural and environmental instability. They get every kind of info, but they've lost their own cultural individuality, their traditional language and they are no longer carrying any bearable culture.5 "Globalization transforms the language in Junkspace. We're still in a language shallow" states Rem Koolhas in Junkspace.
The need of studying a model like that comes from the unstable situation modern town is in. Spaces surrounding towns act like a flexible widening and thickening system.
There are different voids from those residual ones. Urban space, the harder it defines itself, the more it widens (and vice versa). 6 According to Rem Koolhaas the sole town able to survive is that one developing outside a context 7, but that is not true. The surviving town overcomes its transformation. That's where the OASIS device idea was born; it is a structural element capable to communicate through different and opposite town/territory parts thanks to its social and environmental condenser role. This survival device can be used for those hostile places that had their early balance broken up: old towns, such as Matera, or oasis-towns such Shibam, Yemen or Petra, Jordan and mountain oasis on the Tibetan plateau, or the Cappadoccia's and Ethiopian religious oasis as well. In the Yucatan's rainforests too whereas water lacks on the surface due to karst conditions, the ancient Maya settlements are seen as oases rainfall-based systems.
Even the South-American big towns like Bogotà and Curitiba have a survival concept-based pattern, by integrating environmental policies in a wider urban and socio-economic changing point of view.
What are those supporting factors allowing the oasis-system survival? What has changed? Why does the OASIS pattern is able to solve and render modern town's problems?
Greta M. Meszoely, an American researcher in her dissertation "Water Resources Management in a Saharan Oasis" states that a system has to be supported by history, tradition, legal structures and strong social values to be fully successful.8 The survey analyses the attention paid to the Moroccan oases canal system, and it shows how the use of natural and useful resources for the whole population survival, is ruled by a straight social hierarchy, where each part plays an important keeping role to the daily balance. There are several approaches today. Some applicable survival and hi-tech systems based on the Foster's Masdar, OMA's Zeekracht and the solar plant in Aqaba oases system, suggest to revitalize some desert area by installing energetic, productive and hi-tech devices; Laureano instead suggests using and recovering ancient building systems as he did for 80 desert oases and the Matera case. Beyond Gilles Clément's Green Belt in Tripoli, the Magnus Larson's is an interesting project from the architectonic and socio-environmental point of view. His project proposes the chance to face desertification in Africa through the use of some bacteria living in damp and swampy areas, through micro organisms able to transform sand in sandstone. The barrier becomes a limit that can reabsorb deserts making them liveable, namely a real limit for survival.
"Trespassing a frontier has always something moving: an imaginative limit […] is enough to change everything, even the landscape: it's the same air, the same earth, but the road is not equal at all […]." 9

Study case_ Figuig Oasis, Marocco

"Every town get the shape from the desert it stands out against". 10
There's only one road linking Figuig to the rest of Morocco, the Route Nationale 17. Leaving Algeria, the oasis undergoes various border arrangements until 1994, when the frontier has been closed 2 km from the mountain range, leaving out the Bni Ounif's sources and territories. The oasis measures 1600 km² and it is parted on two levels: upper Figuig at 900 m on the sea level and lower Figuig at 870 m. Tzadert is the more prolific source between the 35 ones set along the fault, The seven ksours, each of them sketched out by a wall fortified through building units, form a dense urban agglomeration, similar to the Arabic medinahs.
Figuig rose up as a survival pattern, founding its economy on handicraft and palm trees cultivations, a durable source. Palm trees are used as nourishment and as a protection screen against sand storms and the strong sun rays. Beyond the many fruit trees and vegetables growing up at the palms feet, there are 9000 productive olive trees. They help maintaining the dampness level in the soil, limiting the use of water for irrigation. Soils' impoverishment, new owners' systems and the resulting lot partition make foggara's11 maintenance even more articulate and harder to manage, leaving palms in a poor state.
Zenaga is the least transformed ksar and the more provided one in the whole oasis, and it benefits from the forty per cent of the entire oasis's water supply. In the remaining areas, neglect phenomena are tearing apart the urban fabric leaving ruins of entire town portions. Buildings are increasingly growing up outside the original centre, drawing up uneven and far less ruled boundaries. The edge is set up as the one Gilles Clément calls diversity refugee, a thick edge where residuals and new materials approach, creating an indefinite space in an ever changing process.
In this border area between desert and oasis, survival could lose its own balance.

Study case_Ghadames, Libya

"It wets everything in a dreamlike atmosphere, and every gesture, every sound seems faded, as if it would cross deep water rather than moving air". With these words Carlo Enrico Rava give us back a picture of Ghadames plunged in a mysterious, wet and shady atmosphere. The oasis stands as a merlon's (serafin) town, along with covered up towns and streets; the town as well was the main caravan centre linking the Mediterranean Sea to the Niger basin. Gaddus, the dermise calculator, controls and manage water: canals drain water from the Ain-el-Frass main source to every single garden. When it stops draining at a given time, water irrigates another garden just like a big rudimental hourglass. Counter-weight wells are typical of those palm trees; they enable a thick irrigation system. Some Ghadames' districts get lost in the oasis. From the monumental centre of the town, you can get a white egg-shaped domes system scattered around dense palm trees, enriched by conic serafins running along a path.
Balance survival needs have been saved up, but parallel to old town the new one is growing; it's such unbearable from the bioclimatic point of view that population on summertime has to seek shade in the ancient old town's buildings.

Study case_Matera, Italy

How can the oasis-system adapt to the modernity changes? In which way, living survival architecture can be related to a skilled technology? What are the social structure that could enable spaces and relations in the surrounding territory?
The Matera's example helps us dealing with such issues.
To many still a dry zone, Matera is an ecosystem made by stone, light and water. The last one is produced by prehistoric techniques: reception, percolation and condensation. Terraces and water supplying systems protect slopes from weathering and at the same time they drain water to the butts inside the caves. The dump in the final hypogeoum is absorbed at night by dig cavities, especially on summertime. Under soil long tunnels and sloping basements overlap in order to let sun rays in till winter time, allowing a lasting cooling on summer. This function has a deep symbolic worth: the union between sun and earth creates water, life. Blocks of limestone dig by the cave inside are used for tuff structures with barrel vaults, the lamioni, which keep the hypogea from the outside especially on their side, creating a protected central environment. The ancient irrigated garden and the pastoral barnyard become a meeting and exchange place for the widened society. The whole urban fabric is built to let each water drop be gathered and used for the common wealth, from roofs to terraces, from ladders to sloped alleys following the canals' pace. It provides us a composite and intricate picture of an organic town and a rocky oasis made by stone and water. "The remembrance town fades into the real places…I was wandering…does it really exist my memory's region?" that's how Pietro Laureano, an architect and Sahara oases expert, describes Matera. We can found the old building skills right in Matera, an oasis-town: its survival ability goes beyond the built up system. It is made by the balance between nature and man work, between organic systems and building wisdom. Water enters the houses till it flows into a middle butt showing up hybrid and striking landscapes. Sassi's future is in the past roots, underground bowels, where water has measured the flowing time. "There are places stronger than us. There are towns able to live in harmony with nature". 12
What is the future of the Sassi and what are the effects on the contemporary city?
Matera is candidate to be the Capital of Culture 2019 and the debate about the role that has within the contemporary European scene becomes more intense. the main problems became elements of interest in their complexity, the problems associated with the use of water becomes a resource. The margin, the extent to which the transformation allows us a glimpse of Matera in the making. Its border is an area of regeneration where the way of dwelling is divided into landscapes of survival where the cultures meet. These are the spaces of the cultural sustainability, intangible and materials at the same time. They are pieces of history that alternate and become entangled, that discover themselves in their evolution.
Herman Hertzberger writes in his "in-between", the space in between: "the threshold is the key of the transition and the connection between areas with different territorial potential and, as place in itself, essentially is the condition of the space for the meet and dialogue between areas of different order." 13

Notes

[1] Pier Paolo Pasolini, La sceneggiatura come "struttura che vuole essere altra struttura", in Empirismo eretico, Garzanti, Milano 1972, p.188
[2] Friedman Y., L'architettura di sopravvivenza, Una filosofia della povertà, Bollati Boringhieri, Torino, 2009
The constant consumption of raw materials and the accelerated process of urbanization will lead us inevitably to a global impoverishment. The data collected by OMA, AMO, ECOFYS and WWF, The Energy Report, 100% Renewable Energy by 2050 in 2011 needed immediate interventions and various acts to restore the global balance.
[3] Nunes J., Paesaggi, passaggi, Lettera internazionale n.105, Year 26, November 2010-January 2011, p.7-8
[4] The nomad lives by traveling in an infinite mode of living. He doesn't stay in one place but is the place to stay in him. "In the course of many seasons the people abandoned by fate, the people who moved to find something to eat, had begun to steal the space bringing it behind a curtain. " Sottsass E., Scritti, Milano, 2002 pag.,537
[5] G. Dematteis, The territorial sustainability of development. From biodiversity to cultural diversity, Lotus 140, Sustainability?, March 2010, pag.84. Globalization compels us to consider the global territory as a homogenous. The differences vanish, since the spoken language, greatly impoverishing the socio-cultural developments in every single country.
[6] Augé M., Rovine e macerie, Il senso del tempo, Bollati Boringhieri, Torino, 2004
[7] R.Koolhaas, Junkspace, Quodlibet, Macerata, 2006, p. 24
[8] Meszoely G. M., Water Resources Management in a Saharan Oasis, Northeastern University, Graduate School of Arts and Sciences, Boston, Massachusetts, October, 2006
[9] Perec G., Specie di spazi, Bollati Boringhieri, Torino, 2008
[10] Calvino I., Città invisibili, Oscar Mondadori, Milano, 1993
[11] The foggara is a system in part of underground channels that, from the primary source, direct the water to irrigate the farmland downstream. Vertical wells are created to facilitate the flow of water and to give access for maintenance in the channel. Once in the valley, large tanks collect the water which is then redistributed, according to a clever interplay of weights and measures administered by the Asraïfi, to the inhabitants of the ksour. The water is dosed according to a time unit called kharouba which is equivalent to 45 minutes of the time water. Since the flow of water is variable depending on the level of fall of rain, this system of time makes more equitable distribution.
[12] Laureano P., Giardini di Pietra, i Sassi di Matera e la civiltà mediterranea, Bollati Boringhieri, Torino, 1997
[13] Herman Hertzberger, Michele Funari (edited by), Lezioni di architettura, Laterza, Roma-Bari 1996, p. 172

Veronica Salomone
Universita' degli Studi "G.d'Annunzio" Chieti e Pescara, Italy

Legenda

01 Figuig Oasis, Marocco by Veronica Salomone

02 Matera by Veronica Salomone

03 Main tank, Matera by Veronica Salomone

Bibliography

Andriani C. (edited by), Il patrimonio e l'abitare, Roma, 2009

Augé M., Rovine e macerie, Il senso del tempo, Bollati Boringhieri, Torino, 2004

Brand S., Una cura per la terra, Manifesto di un eco pragmatista, Codice, 2010

Cacciari M., Nomadi in prigione, in Casabella n.705, Novembre 2002, p.6-7

Calvino I., Città invisibili, Oscar Mondadori, Milano, 1993

Clément G., Manifesto del terzo paesaggio, Quodlibert, Macerata, 2005

De La Croix Castriers H., Paris, 1882; Levinck A., L'Oasis de Figuig, in Revue de Geographie, I.G.P., #7, XIV, 1884

Edilizia Moderna n.87-88, La forma del territorio, 1965

Friedman Y., L'architettura di sopravvivenza, Una filosofia della povertà, Bollati Boringhieri, Torino, 2009

Heidegger M., Costruire, Abitare, Pensare, in Saggi e Discorsi, Pfullingen, 1957, Milano, 1976

Koolhaas R., Junkspace, Quodlibet, Macerata, 2006

Laureano P., Giardini di Pietra, i Sassi di Matera e la civiltà mediterranea, Bollati Boringhieri, Torino, II edizione 1997

Laureano P., Sahara. Oasi e deserto, un paradiso perduto ricco di storia e civiltà, Firenze, 2001

Linch K., L'immagine della città, Marsilio editori S.p.A., Venezia, 1964

Lotus 140, Sustainability?, Marzo 2010

Meszoely G. M., Water Resources Management in a Saharan Oasis, Northeastern University, Graduate School of Arts and Sciences, Boston, Massachusetts, October, 2006

Micara L., Architettura e spazi dell'islam. Le istituzioni e la vita collettiva, Roma, 1985

Micara L., A. Petruccioli, E. Vadini (edited by), Mediterranean Medina, Roma, 2008

Nunes J., Paesaggi, passaggi, in Lettera internazionale n.105, Anno 26,novembre 2010- gennaio 2011

OMA, AMO,WWF, ECOFYS, The Energy Report, 100% Renewable Energy by 2050, 2011

Pasolini P.P., La sceneggiatura come "struttura che vuole essere altra struttura", in Empirismo eretico, Garzanti, Milano 1972, p.188

Perec G., Specie di spazi, Bollati Boringhieri, Torino, 2008

PPC 20-21 Piano Progetto Città, Casa New Motion,(a cura di) Susanna Ferrini, Sala Editori, 2003

Rava C.E., Ai margini del Sahara, Dar-al-Fergiani, Tripoli, 1936
Sottsass E., Scritti, Milano, 2002

M. Katherine Wingert-Playdon
Temple University , Philadelphia, PA, USA

Philadelphia Green Structures

City Infrastructure

In 2010 Philadelphia City Planning Commission published a comprehensive city plan, the first plan that addressed the entire city in fifty years. The 2035 Plan has as a central aim to work integratively across city agencies. Like many cities in the world, there are important reasons for doing this at this point in time. Firstly, data is accessible and available and the methods of planning have been positively impacted by the availability of GIS mapping data. This is transformative in how we look at cities and understand their structures. An important reason for planning at this time includes the current complexities with which cities are faced. New issues of technology and environmental sustainability now stand alongside ever present issues of urban well-being, social justice, growth and development, commerce, transportation, and so on. And in a similar manner to other post-industrial cities in the 21st century, Philadelphia's plan necessarily focuses on mending the context, working with positive attributes and potentials. The 2035 Plan addresses all neighborhoods and even crosses borders in its focus, thinking carefully about relationships with neighboring counties – Chester, Montgomery, Delaware and Bucks and Camden County in the cross-river state of New Jersey. Integration, therefore, also includes a comprehensive view of the overall structuring of the city and region.

By contrast the 1960 plan for Philadelphia was guided by a central spatial vision. The plan, encapsulated in the image "The Total Organism" in Ed Bacon's Design of Cities (figure 1) was formed with the 1683 Penn / Holmes plan of Philadelphia as the base. The Penn / Holmes plan is 1 by 2 miles in dimension with five squares that are organized according to a geometric pattern around a central crossing of two major 100 foot wide streets. Streets and organizational geometries in the Penn / Holmes plan are based on a system that uses the number 5. The laying out of streets and filling in of the grid in the Penn / Holmes plan took many years to accomplish but the geometry was set by property lines, and the overall vision was therefore intact when the city emerged in the early part of the 19th century. And the structure of the Penn / Holmes plan remained intact through many phases of city growth. By 1960, the green infrastructure characterized by the city's squares was easy to discern, but with the a large portion of the central part of the city was in need of repair, there was an opportunity to extend the green system. In the center of the city the comprehensive plan addressed urban blight and renewal, building on historical aspects of the city to develop Philadelphia's character. The plan also used a structure of green walkways to build on underlying structures already in place within the Penn / Holmes plan. The plan also envisioned an extended green system by illustrating the park system of the city as an extension of the green system. The vision of the city included the northwest quadrant's diagonal Parkway that connected to Fairmount Park northwest, linked to the structure of squares through Logan Square, terminating in Center Square in the heart of the city. The orientation west and northwest allowed the vision to take advantage of park systems in those directions. The greenways of the 1960 plan built on the theme of a 'living organism', adding tree-lined streets and small parks to stitch the city structure through some of the areas that had experienced the worst blight in the southeast quadrant of the city. It used a then-recent act of urban renewal, the demolition of warehouse structures and dwellings in the northeast quadrant, to open up a plaza in front of Independence Hall. The spatial vision built on the Penn / Holmes plan and historical architectural remnants to secure the 1960 plan's place in Philadelphia's civic identity.

Identity of an expanded field for the city

The 2035 plan uses three organizational categories – Thrive, Connect, Renew – to build a conceptual framework. In its spatial and physical dimension it builds on the achievements and structures of the 1960 comprehensive plan and looks at areas of the city beyond the center. The plan addresses the physical infrastructure, analyzing each in terms of what should continue to thrive, where there is potential for connection and where there is need for renewal. Large urban structuring issues that are non-spatial, economic growth potential, for example, are addressed in terms of building on existing spatial infrastructures – industrial growth's potential, for example, is linked with the need for additional public transportation or better connections. Many of the plan's aims recognize the existing attributes of the city and the inherent beauty and facility of what is existing, and the potential to draw out attributes in order to build on what is best within the existing context.

A number of the key objectives of the plan have potential to be transformative. Tangible results for two of these objectives – the objective to reduce land vacancy and the objective to address environmental resources are already apparent in North Philadelphia, approximately 2 miles north of the city center, in the area adjacent to Temple University. The 2035 plan identifies this area as having potential in general as a place to increase the city's housing stock and in one particular site as a transit oriented development community surrounding the SEPTA rail line.

But with rapid growth in the 19th century, primarily in the production of housing stock and blight due to a population that migrated out of the city in the post-World War II period, North Philadelphia is also mapped as one of the areas of the city with the least tree coverage and the most impervious pavement. As an old development, it is an area of Philadelphia where the sewer system is a combined storm water and sewage; these areas of the city are notoriously problematic during times of heavy rains because of the quality and volume of water that enters into the watershed. Because of the projected growth and need for attention to environmental factors, North Philadelphia is an ideal area in which to address spatially transformative characteristics in the plan. In particular, the integration of principles from the water authority's Green City Clean Waters program in the North Philadelphia.

Mapping in Philadelphia

Beginning with the 1683 plan, Philadelphia has a long history of mapping and surveys. Many of the early maps and survey drawings concentrate on the area of the Penn Holmes plan. Located in an alluvial plain between the Delaware and Schuylkill Rivers, the city center grid is a relatively flat territory. The overall geography is significant, the grid lies in the Coastal Plain of the Eastern United States, but just on the edge of the Eastern Piedmont which cuts through Philadelphia. When Philadelphia expanded westward and eastward beginning in the 19th century it crossed over the geologic line between the Coastal Plain and the Piedmont. Survey documentation that accompanied the laying of the Penn / Holmes plan indicates some areas of significant cut and fill to flatten or smooth out the territory. Where this is primarily for reasons of drainage towards the Delaware River in the east and towards the Schuylkill River in the West, it also had the affect of supporting the idea of the ideal plan as a unified spatial grid. Philadelphia's grid is simultaneously a closed and open system. The 1 by 2 mile ideal plan is discernible and with the help of the topography and map reads as a system onto itself. But it also is expansive. The development of the city in the 19th century read the grid as an open system, first expanding westward then northward.

The 1802 Varles Map shows a direct expansion of Philadelphia towards the west, and delimits the growth of the plan probably to the area where flat plain could be imagined at the start of the 1800s. The map shows complex land features north, south, and west. In considering growth of the city, westward expansion was easiest. But the Lindsay and Blakiston map of the consolidated city gives a different picture of growth. The map, from the mid-19th century indicates that growth had occurred westward and that there were plans to expand the grid southwards and northwards. Southwards, growth was limited by wetlands, northwards, it was speculated that the grid could continue with ease for a considerable distance. In fact, the grid did expand to the north, as depicted in the 1898 USGS map. As can be discerned in the 1898 USGS map, the westward expansion was limited by the topography. Both western and northern expansion of the city grid was into the Piedmont, but the full impact of the Piedmont on the expansion of the grid was at a further distance to the north than the west.

The line between the Piedmont and the Coastal Plain is clearly discernible in Philadelphia through topographic changes in the present day. But the line was accompanied by watercourses that are no longer apparent. Streams were channeled and wetlands filled early in the history of the city as industrial usage impacted the quality of the streams. The 1810 map of Philadelphia shows the Pegg's Run creek and wetlands area, just north of the completed center city plan at a time when it was still partially present, but covered over with the city grid at its eastern end. The 1810 map also shows the area before it was engulfed by the expanded grid. The area called Penn Township at that time is mostly open land and roads, and settlements adhere to the topographic features and streams. The 1898 USGS map clearly indicates that most of the underlying structure of the Piedmont has been submerged by the grid, although there are a few exceptions – Ridge Avenue, so-named because it follows the Ridge above the Schuylkill River, is the most prominent exception to the relentless grid, and there are some east west streets that are shifted slightly in relation to the rectilinear order, remnants of the preexisting order.

New Building Old Maps

The Cohocksink Creek, seen in the 1810 plan north of Center City, separates Kensington and Northern Liberties from the Spring Garden and the rest of Philadelphia. The creek has a southern branch that meanders to the west for about a mile and a northern branch that also continues for a distance. The southern branch of the creek is in an area where new housing is currently being built and in an area identified by the 2035 plan as a place with potential for redevelopment. With all new projects in Philadelphia needing to consider the impact of water runoff as mandated by the tax structure, it is interesting to speculate to what extent the location of creeks and topographic features could impact rebuilding and resettlement of this area of the city.

The Green City Clean Waters initiative actively promotes a number of strategies for controlling water runoff. Green roofs, pervious pavement, rain gardens can contribute as independent initiatives. They can be taken on by individual property owners and community organizations to retrofit properties or they can be applied to new development. But the Green City Clean Waters program also has initiated large changes. Streams in outlying areas of the city have been restored. The Green Streets program has been implemented in some areas – an integrated approach to storm water management that includes rain garden areas integrated with drainage but also adds street trees, thus increasing the green infrastructure and creating a much needed microclimate change on individual streets and in small pockets of the city.

In North Philadelphia where extensive urban rebuilding is currently underway, building initiatives include consideration of the impact of water runoff and integration of green infrastructure. Water retention underneath new development is carried out because it decreases the fees paid to the Water Department for property owners. Water retention management is carried out by property owners on a project by project basis, but with widespread rebuilding in the area, the whole that is gained by attention to storm water drainage on individual properties or a block at a time will be of great benefit to the overall system.

The amount of infrastructure change that has begun along with the anticipated change that will occur has led to questions about finding the underlying topographic structure in North Philadelphia. The premise is that opportunities might arise from understanding the structure that is underneath the grid. The overlay of historical maps already tells us where there is convergence or divergence of topographic structure and the grid that was surveyed across the city. In early development the topographic condition was accommodated to some extent in the grid. This is best seen in the relationship of the Penn/Holmes plan and the William Fadden British Encampment Plan. From the mid-20th century the laying of the Philadelphia grid as it extended north and west tended to ignore topographic features. Filling of streambeds, sometimes 30 feet or more in depth, was carried out to accommodate the grid. Some of these structures have been reversed by necessity. But areas of less dramatic topography emphasize the grid.

Available Resources for finding landscape, next steps

There are several recent and current initiatives that have to objective of finding the underlying landscape in Philadelphia. In 2000 there was a study carried out by the USGS to map the streams in the USGS Quadrangle maps in the northern part of the city, just north of the area of Philadelphia that includes the Cohocksink Creek bed. The process used historical maps and current USGS data, GPS technology and soil testing to determine recreate as best as possible the stream beds that existed prior to the mid-19th century when growth and industry drastically altered the Philadelphia landscape. The results are informative. In an area that includes a site of sinking houses that had been built on fill the information gained from the mapping extends the understanding of the topography, indicating areas of possible fill and probable fill. The map shows that amount of fill is extensive, both in areas of gentle topography and in areas of steeper topography. The historian Adam Levine, in his work to identify and organize maps that are part of Philadelphia archival collections, has recently come across maps in areas of the city where a the detail of the topography gives a clear understanding of the historical condition in the 19th and 20th century at a time of growth, expansion, and change. In South Philadelphia in the maps are of the wetlands, a flat area so the contours are at 1 foot intervals. The historical resources that have recently been uncovered along with the available resources of current conditions allow for a thorough understanding of the historical layers of the city.

In North Philadelphia we are currently undertaking the task of understanding the historical landscape of the city through historical maps. The data can tell us with some accuracy the location of the Cohocksink Creek, and at some point in the process we will follow the processes used in 2000 to find areas of probable and possible fill. Although the need for this information is less urgent than on sites where sinking homes and cave ins have occurred, there are still uses for this information. Firstly, finding the channeled streams can be used in consideration of redevelopment. This could impact redevelopment in a number of ways. The most apparent use during this period of urban redevelopment is knowing how natural drainage did work and whether it impacts the site in any way during redevelopment. But there might also be design impact through knowing the location of streambeds and fill. A green infrastructure might find its order and organization by referencing the underlying topography. The convergence of grid and topography could make for interesting spatial opportunities in the city. Some have suggested that daylighting streams would be in order. In most cases this is not ideal goal given the polluted nature of the streams. But a green infrastructure that includes greenways, rain gardens, and drainage that references and aligns with the streambeds and areas of fill might in fact be a better way to revive the natural order of the city in relation to the man made order imposed by the grid.

Conclusion

North Philadelphia, just north of Center City is undergoing revitalization, and according to the 2035 plan's analysis, it is an area that is very much in need of a green infrastructure to provide open space and environmental resources that can add to the city's well being and an improved environment for its residents. Understanding the historical landscape provides an opportunity for ordering this area of the city. Perhaps the spatial vision that was such an important part of the 1960 Comprehensive Plan for Philadelphia, can extend into this area through the green infrastructure, the "Total Organism" presented by Ed Bacon could easily be extended here. With this in mind, a vision of the city that looks northwards as well as westwards from the center is possible.

M. Katherine Wingert-Playdon
Temple University , Philadelphia, PA, USA

References

Archives
Levine, Adam, Philly H2O, online database of maps and images: http://www.phillyh2o.org/

Philadelphia City Planning Commission: http://philaplanning.org/

Philadelphia Water Company Online Historical Collection: http://philawater.pastperfect-online.com

Print resources
Bacon, Edmund. Design of Cities. New York: Penguin Books, 1976.

Chirico, Peter G. and Jack B. Epstein, Geographic Information Systems Analysis of Topographic Change in Philadelphia, Pennsylvania, During the Last Century. 2000: USGS Open File Report 00-224.

Green City Clean Waters: The City of Philadelphia's Program for Combined Sewer Overflow Control. Philadelphia: Philadelphia Water Department, 2009.

Mapping Buried Stream Valleys in Philadelphia, Pennsylvania. 2000: USGS Fact Sheet FS-117-00.

Philadelphia 2035 Comprehensive Plan Draft, Philadelphia: Philadelphia City Planning Commission, February 15, 2011.

Econsult Corporation, Penn Institute for Urban Research. Vacant Land Management in Philadelphia: The Costs of the Current System and the Benefits of Reform. Philadelphia: Redevelopment Authority of the City of Philadelphia: 2010.

Image captions

Image 1: Philadelphia 2035 Plan, diagram of industrial potential

Image 2: Philadelphia 2035 Plan, tree coverage

Image 3: 1802 Varles Plan of Philadelphia

Image 4: Lindsay and Blakiston Map of 1854 Philadelphia Consolidation

Image 5: 1810 Map of Philadelphia

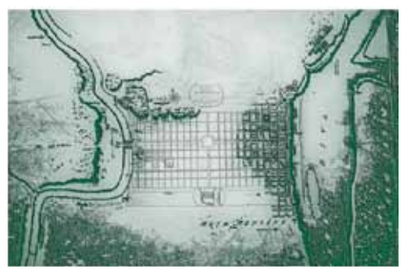
Image 6: 1898 US Geological Survey Map of Philadelphia

Image 7: Penn / Holmes Plan of 1683 overlaid with the William Fadden British Encampment Plan of 1779, showing the relationship between the ideal city grid and the landscape.

Image 8: US Geological Survey maps of Frankford and Germantown Quadrangles, depicting areas of possible and probable fill.

Notes

[1] Philadelphia was consolidated in 1854. Consolidation corresponded with increased growth and development.
[2] In some cases this had disastrous results in later years with cave ins of sewer channels and settlement of fill. This has been well illustrated and carefully researched by Adam Levine in his work for the Philadelphia Water Department.
[3] 1997 USGS Frankford and Germantown Quadrangle Maps scale 1:24,000, were used as the base for this survey.
[4] Coal ash was used for fill and the streams were channeled.



Yannis Zavoleas - Panayotis Tournikiotis
University of Patras, Greece

Archetypes in-formation. Strategies of transition in architecture and urban design

Keywords: machine, network, archetype, systemic architecture, late modernism

Introduction. From abstract to form

In the course of late-modernism, the transition across space units of different scales making up the city was possible due to the utilization of archetypical systems. Architecture and urbanism's common practice was to describe the variety of desired qualities in relation to semantic references, such as machine and network. By comparing machine's and network's adaptations to space, the paper's scope is to scrutinize the significance of archetypical systems along the design process. Archetypes act as schematic visualizations showing the relations among the units involved, as much as they are notably disassociated from the restraints of matter and physical form. They may variously be interpreted as they may also be modified even be combined with other archetypes too, and so they are inherently ingrained with the potential for adaptation according to the specificities of each case of study. A complete reevaluation of the design process would reflect the idea that architecture holds information being codified and retrievable at the same time, so as to envision an architecture that is responsive to any kind of data, according to each time's set priorities.

Machine and network as assets of metaphors expressing different spatial order

Machine and network are referents of technological origin representing two opposite logics. Their differences are reflected onto their nominative features.
Machine was a prominent symbol of modernism and its structural qualities responded to the ideals of that era. Machine's adaptations in design include examples of architectural and urban scale. Concept designs about the "machine-house," the "machine-building" and the "functional city" were developed during mid-war. The related proposals demonstrate machine's supportive role practically in every human activity. The idea behind was that a space unit could be translated to a "functional apparatus," being expressive of the technological sublime. Implementations further focused on the transference of machine's properties to design principles. Such a tendency was very much influenced by the priorities imposed due to the economic crisis of the Thirties. Efficient housing units was the main theme of 2nd CIAM held in Frankfurt in 1929, whereat machine's attributes were related to the fulfillment of basic living needs, low-cost production, standardization and maximized effectiveness (Heynen, 1999). Ernst Neufert's seminal study Architects Data first published in 1936 was a comprehensive guide offering design solutions in terms of functionality, thorough analysis and construction, also responding to a variety of programs, sustainability, even aesthetics. Around the same era, Otto Neurath came up with ISOTYPE, a graphic language system of symbolic icons whose aim was to ensure interdisciplinary communication and the adaptation of scientific methods of data manipulation in urbanism and architecture (Neurath, 2008). In machine-based design, space would perform as rigid and secure, also following chain reactions and the production process would be described as a sum of algorithmic operations. Efficient design further involved the allocation of discrete functions in separate space units, as if these were specialized machine parts. Prediction resulted from regularity and was achieved by following rational methodologies and repeated procedures. Overall, machine's adaptations to space would be about the transference of values such as optimization, effectiveness, performance and prescribed processes, towards a predefined outcome.
After 2nd World War, the network represented a set of intellectual and ideological challenges, being reflective of the radical social changes. Large-scale architecture and urbanism focused on the quest of new organizational schemas incorporating network's characteristics also being in response to the emerging social structures, replacing the mechanical ideal. The urban schemas of the Utopians of Fifties and Sixties introduced priorities such as ceaseless change, mutation and expansion of the city in all directions. The adopted positions expressed a general spirit of contestation against modernism, being considered as the outdated status quo that was no longer capable of supporting the plurality, the contradictions, the mobility, the tensions and the qualities of contemporary life. Visionary thinkers such as Yona Friedman with his proposals of Ville Spatiale applied in Paris in 1958-9, 1964 and 1970, Tunis in 1959, New York in 1964 and Venice 1969 among others, Constant Nieuwenhuis' New Babylon of 1956-74 and Takis Zenetos' Electronic Urbanism of 1962-74, worked systematically on the development of hyperstructures of a general network logic that could expand above the city, often at the residual areas of the land left unbuilt, the remaining natural landscape and the coastline.
In spite of the boldness of these proposals, for some architects and city planners of the post-war era it was clear that the establishment of new models of social structure in replacement of past ones could only happen with design projects that were grounded to reason, rather than to utopia. In this general framework belongs the work of architects of Team 10. They presented themselves as "Utopian, but Utopian about the present," whose aim was "not to theorize but to build, for only through construction can a Utopia of the present be realized" (Smithson, 1968). Team 10's organizing schemas carry many of the characteristics of the network model. They are abstract, open, flexible and they are variously applicable. Their common belief was that the architect designs the system, without controlling all of the elements making up the total, not even the exact form of the building (Allen, 2001). Around the same time, Constantine Doxiadis employed network structures to describe the dynamic relations among spaces of all sizes, ranging from the generic room-cell to the building, the block, the neighborhood, the city, the aggregate of cities and nations, to the globe. For Doxiadis, network structures may be traced in every aspect of existence setting the world ecosystem (Doxiadis, 1963). Networks signify the new establishment of relations among architecture, sciences and social activities (Pyla, 2002). In retrospect, it may be claimed that the pioneering architects of Fifties and Sixties have set the basis, upon which contemporary research in architecture is often geared, above all with the introduction of technological innovations related to the computer (Tzonis et al., 1999). Concepts such as virtuality, event-space and ubiquitous information flow echo the influences of electronics and digital technologies in the apprehension of space, as these were mentioned for the first time by Doxiadis and the wider circle of scientists with whom he collaborated for long (Wigley, 2001). Organizing structures referring to network introduce qualities related to adaptability, also the ability to support collaborations and heterogeneity among the parts and to permit a variety of combinations towards unspecified outcome.
Next, it will be shown that an updated evaluation of late-modern works, rather than projecting on them the replacement of machine structures with ones related to network, it points at the machine / network compound model introducing qualities of both parts; specifically, that the network arrangements globally support mechanical relations locally, forming polycentric structures. This model reflects the total spectrum of characteristics of urban space, being related in dynamic manners towards forming an organic whole. More importantly, the aim of machine / network synergy would be to explore the modes of association among different spatial entities, functions and scales in the city; by this means, to set the conditions of attributes about space according to pairs of characterizations generally seen as contradictious such as effectiveness and transformability, also in relation to time.

Late modernism revisited. Organic modes of association projected on archetypical systems

The interest in organic modes of development has led to an extensive research on archetypical systems. Schematic configurations such as the stem, the web, the mat and the matrix that will be shown later were main themes of study throughout late modernism. What is more, these schemas were manipulated very differently, depending on the idiosyncrasies of each design case. For example, dwelling units ranging from the house to settlements of varying size were viewed as dynamic parts of a higher order that was also able to adapt, to change and to expand. These objectives direct the work of Team 10 architects Candilis-Josic-Woods. The group appointed flexible structures of minimal organization and so offering a variety of adaptations, as the proposals could be developed partially also permitting modifications over time.
Candilis-Josic-Woods worked extensively with the stem. In its simple form, the stem is described as a line such as the street, upon which the urban activities of all types are attached as "plug-ins," such as market, culture, leisure and religion, also parks, gardens, administration, public services and housing. The stem may be extended to its both ends, as it may bifurcate, too. In the street version, it is mostly often separated from mechanical traffic, so that pedestrian movement stays secure and uninterrupted.
Candilis-Josic-Woods applied the stem to various projects, for example the University of Bochum in 1960 (fig.1), Caen – Herouville in 1960-1 and Toulouse – Le Mirail in 1961-3. The stem functions cohesively for the space units it supports, including all forms of human association. It is supposed that some functions tend to generate more intense activity than other ones. Activities at varying levels of concentration may be connected and related together through a malleable axis whose shape is prone to change. With the gradual transition from concentration to change, a series of opposite qualities concerning space with the intermediate phases between them unfolds, concerning the private and the public, the specified and the unspecified, the definite and the diffused, the closed and the open, echoing the attributes of the compound machine / network model.
As the stem evolves, it transforms to a web of main and secondary streets. The web is a system of higher order that retains the attributes of the stem. For Candilis-Josic-Woods, the web – and the grid, too, in its simplest form – is a more advanced arrangement, carrying multi-level activities, services and space types as well. Its form is not a preconception but a result, in fact an unknown. The web is generally non-centric and through these peaks of intensity it becomes polycentric. Like the stem, it is open-ended and it can grow and change (Candilis et al., 1961). The web was first applied at the proposal for the reconstruction of the Historical Center of Frankfurt-Römerberg (fig.2) in 1963 and later on for Frei Universität (fig.3) in Berlin in the same year, a project that was partially realized. The proposal for the Frankfurt center was about the development of a general grid system extending equivalently to all directions. The grid reconnects the areas and the buildings that remained intact after the destructions of 2nd World War. A perplexed mesh of successive levels unfolds as it connects the remaining monuments of the city, making a thick structure of varying density. The structure is adaptable to the pedestrian scale and to the immediate environment of the area. In Frei Universität, the grid was also combined with the stem, producing a complex web structure with hierarchies in its interior. It is made of the parallel repetition of four pedestrian streets. This brunch defines the main orientation for the project. The four streets are connected together with secondary paths, being set in higher density.
In a series of related experimentations, Doxiadis proposed a multi-layered "horizontal" and "vertical" system based on the grid, which may be described as ¬nesting (fig.4). Moving inwards, the system stays more static; moving outwards, it becomes more open. Doxiadis first expressed this dynamic system in a schematic urban arrangement called Dynapolis; then he applied it in the City of Islamabad, being the new capital of Pakistan in 1960 and the City of Detroit in 1965-70. In these schemes, the city center also follows a dynamic expansion towards an axis, so that the city can grow in a predesigned manner, avoiding uncontrolled congestion (Doxiadis, 1966). The formed poly-centricities offer a gradation of areas between open and closed, public and private, noise and quietness, diffusion and concentration and they may belong to a dynamic hyper-system. Overall, the stem and the web structures express the potential for development over time being flexible and expandable as well, while supporting the effective resolution of local areas according to specified needs.
The work of Candilis-Josic-Woods on archetypical systems was very influential at the time, to the extent that Le Corbusier directed the working team for the project for Venice Hospital he designed with Julian de la Fuente according to the drawings of Frankfurt Center, presented to him by Shadrach Woods (Tzonis, 2001). Le Corbusier with Venice Hospital completes his lifelong research on systems, which started as early as in 1914 with Dom-ino and continued with a series of works on multiple cases. The design of Venice Hospital started in 1964 and was finished by de la Fuente in 1966, one year after Le Corbusier had perished. It is a manifestation of the mat structure, a composite variation of the grid (fig.5). The general scheme does not hold any excessive points, remaining neutral. Locally, however, one may find the plurality of space qualities about the interior and a variety of intensities according to the hosted activities. The total is an open structure forming a playful "lace" gently placed at the coastline of Venice, in so doing suggesting a poetic relationship with the irregularity of the urban tissue (Allard, 2001). Le Corbusier, during the latest period of his work, developed a thorough research on alternative systems being open, also combining the nominative qualities of machine and network structures. As a result, he also developed a version of matrix deriving from the grid for Olivetti Electronic Center in Rho-Milan, in 1962-4 (fig.6). In that case, space is arranged in the cells of a total, divided evenly, also offering a variety of densities in different buildings, being connected by an elevated circulation system that traverses the whole. This unifying system starts from the national highway and it follows every possible direction forming an organic network of circulation in amoebas shape. The circulation mutates according to the spaces it encounters, being also combined with areas set for common activities such as the restaurant, the library and the administration, as it finally enters with its "tentacles" the inner space units reserved for production.
Upon comparative examination, it was shown that archetypical systems of late modernism were adapted extensively in various projects (fig.7). Their structural characteristics may be explained with the aid of semantic pairs of opposites, for example clearness / ambiguity, fixity / openness, rigidity / flexibility, hierarchy / equality and rule-making / rule-trespassing. The formed set of dualities including the instances between them relates to the proposed machine / network model (fig.8). The dynamic associations of these opposites projected onto different space units is possible due to the fact that each unit belongs to a larger spatial entity being open enough to support a collective of varying parts; at the same time, the unit behaves as a larger entity, framing a total of units of lower class, defined in a more specialized manner. The spatial units may thus be classified according to size in successive layers dynamically related to each other, providing with the desired range of space qualities.
It may also be argued that the more architecture is concerned with large-scale issues, the more it may be understood as a problem of strategic development, for which archetypical systems support the relations among different space units. Archetypical systems are an aid in the transition from abstract descriptions to technical drawings; they are used to classify data and to allocate it in regards to space; they set the general organizing logic and; they are malleable permitting a variety of configurations. Overall, archetypical systems are methodological means giving shape to architectural thinking along the design process, meanwhile referring to organization, rather than to formal choices.

4. Conclusion. Form as the result of codified information

The transition across different scales making up the city manifests a palette of notably diverse qualities. Machine / network model is used as a semantic pair, providing with a full set of terminology needed to describe space in its totality and to dynamically relate its parts. A common practice for the usage of such models is the manipulation of information deriving from analysis. Data of all kinds about a design problem of any scale may be compared and related to each other in an abstract level. The produced relationships may then be transferred to space, as they are projected on archetypical systems. Structural development may generally apply to large-scale problems, but the processes described above are suitable virtually in any other case, too. These abstract schemas of space configuration set the structural basis upon which architectural form emerges and is gradually materialized.
Nowadays, the interest on archetypical systems is further combined with the digital production means in regards to parametric computation and dynamic manipulation. Form may be viewed as a resultant of the structural relations among the parametric data it supports, as it may be reduced to this data, also be adjusted to change happening along the design process and during the prolonged phases of construction. Advanced computer-aided methods ally with the objectives put forth throughout late-modernism, on the premise of an architecture that is prone to mutation – in theory, at least.

Bibliography

Allard, P., Bridge over Venice: Speculations on cross-fertilization of ideas between Team 10 and Le Corbusier (after a conversation with Guillermo Jullian de la Fuente), in ID Le Corbusier's Venice hospital, Harvard Design School Prestel, London, 2001.

Allen, S., Mat urbanism: The thick 2-D, in ID, Le Corbusier's Venice hospital, Harvard Design School Prestel, London, 2001.

Candilis, G., Josic, A., Woods, S., Recent thoughts in town planning and urban design, in «Le carré bleu», n.3, 1961.

Doxiadis, C., Architecture in transition, Oxford University Press, New York, 1963.

Doxiadis, C., Between dystopia and utopia, Faber & Faber, London, 1966.

Tzonis, A., Le Corbusier: The poetics of machine and metaphor, Thames & Hudson, Bath, 2001.

Heynen, H., Architecture and modernity: a critique, The MIT Press, Cambridge MA, 1999.

Neurath, O., The language of the global polis. NAi Publishers, Rotterdam, 2008.

Pyla, Panayiota I. Ekistics, architecture and environmental politics, 1945-1976: A prehistory of sustainable development, MIT PhD Thesis, Cambridge, MA, 2002.

Smithson, A., Team 10 primer, The MIT Press, Cambridge MA, 1968.

Tzonis, A., Lefaivre, L., Beyond monuments, beyond zip-a-tone, into space/time, in ID, Free university Berlin, Architectural Association Exemplary Projects 3, AA Publications, London, 1999.

Wigley, M, Network fever, in «Grey room», n.4, summer 2001.

Image Legendas

1. Candilis – Josic – Woods, stem. Adaptations of the stem for University of Bochum (1960) (credits: Yannis Zavoleas, with Kalamotis, Karudi, Labropoulou, Rigopoulos).

2. Candilis – Josic – Woods, grid structure. Adaptations for Historical Center of Frankfurt-Römerberg (1963) (credits: Yannis Zavoleas).

3. Candilis – Josic – Woods, composite grid / stem structure. developed for Frei Universität, Berlin (1963) (credits: Yannis Zavoleas, with Vasilopoulou, Oikonomou, Panopoulos).

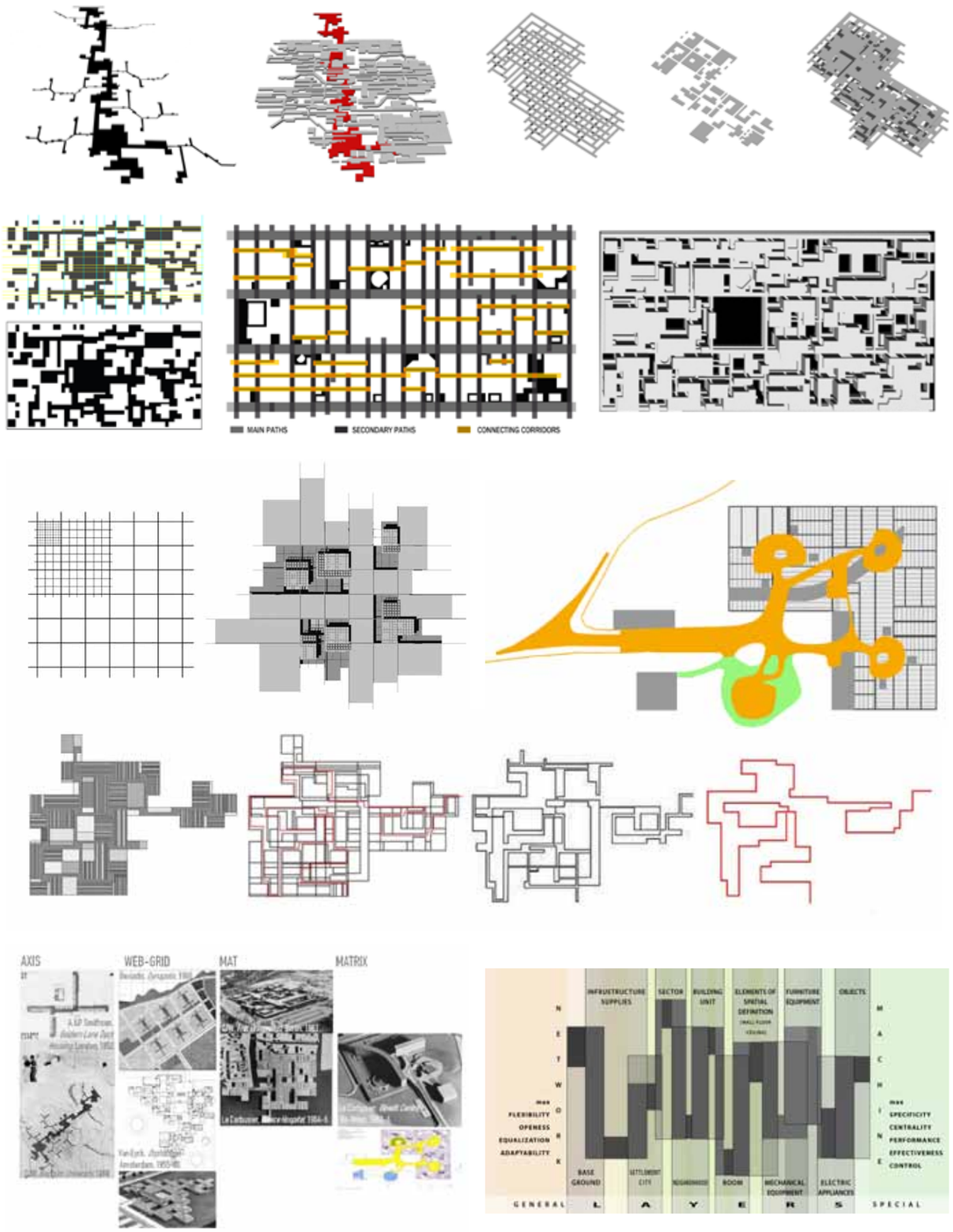
4. Constantine Doxiadis, grid nesting (credit: Yannis Zavoleas).

5. Le Corbusier & Julian de la Fuente, the mat system in Venice Hospital (1964-6) (credits: Yannis Zavoleas, with Vlanti, Tassopoulou).

6. Le Corbusier, Olivetti Electronic Center in Rho-Milan (1962-4) (credits: Yannis Zavoleas).

7. Comparative table of archetypical systems of late modernism (credits: Yannis Zavoleas).

8. Machine / network model. Descriptive diagram, showing the relations among the different space units, also the dynamic appointment of characterizations about a unit, according to its relative placement (credits: Yannis Zavoleas).



Summary / Theme 7

John Brennan,
University of Edinburgh , UK

The Adaptive City

Not only is the city an object which is perceived by millions of people.it is the product of many builders who are constantly modifying the structure for reasons of their own. While it may be stable in general outlines for some time, it is ever changing in detail.
(Lynch, 1960)

Sustainability as a term that engages with social, economic and environmental aspects of the built environment is subject to almost limitless interpretation. It frames so much as to the evolution and transformation of the built environment, yet can be counterintuitive and contradictory [1]. At the heart of sustainable discourses lies the Bruntland definition of 'not compromising the needs of future generations' (Bruntland et al, 1987). However this imperative eventually manifests itself in legislation and regulation usually applied to carbon regulation. Such a coercive process does not harness much of the potential that lies in sustainable discourses to engage in urbanism beyond the narrow confines of energy and resource conservation.

To date, design practice has experienced a problematic relationship with sustainable ideologies. At the heart of this, lies a disciplinary schism in architecture between the quantitative and qualitative worlds. We often experience this in the fraternal yet often fractious dialogues between design education and professional practice (Oliver, 2005). 'Green' architecture and urbanism is either consigned to a hermetic world of an imagined counter culture or is seen as being technologically instrumental, deterministic and impervious to culture, context and creativity. An aspiration of this paper is to argue for a reading of sustainable discourses in the built environment that resonate with the preoccupation we have of nurturing and celebrating a culture of evolution and reinvention in the city.

Sustainable methodologies are introduced into the built environment through the devices of scores, ratings, thresholds and targets. Such an approach is less successful in finding value in sustainable practices that engages with economic, social and cultural realms. John Farmer in Green Shift made an early contribution that placed ecological design in a considered historical and cultural context (Farmer, 1999). It can be argued that the discipline boundaries erected around bodies of knowledge as described by Tony Becher in Academic Tribes and Territories do not serve architecture and the built environment well (Becher, 2001). Design discourses and pedagogies tend towards either qualitative or quantitatively minded audiences [2]. Intelligent descriptions of a sustainable urbanism should have an affinity to more diverse, complex and nuanced traditions.

For sustainable practices to embed properly in design narratives, they need to develop beyond exclusively valuing virtue through quantifiable utility and thrift in the use of resources. Suzannah Hagan defines typologies of environmental architecture through the terms symbiosis, definition and visibility that transcend the purely functional (Hagan, 2001). Guy and Farmer in Reinterpreting Sustainable Architecture (Guy et al, 2001) attempt to identify traits to define a series of 'sustainable logics' in architecture that are mediated by social practice [3]. This paper does not propose to further contextualise a series of interpretations of sustainable urbanism. Instead, we investigate the concept of building adaptability as a vehicle to create sustainable design strategies that work with the city as a dynamic and unpredictable organism.

Many qualitative narratives seek to capture the essence of the addictive nature of our cities, Nan Ellen puts it well in Postmodern Urbanism when she says:
'Part of the appeal of ecology and of border and edges is their ability to adapt creatively to change, their inherent flexibility…. there is an emphasis on what happens when diverse regions, peoples, styles, technology and so forth collide and merge' (Ellen, 1999)

Such a template seeks virtue from exponential growth that comes from globalisation and the chaotic social and physical infrastructures exhausted at the relentless rate of change they experience. In contrast, the pre-eminent vision of the sustainable city is utopian in nature, serenely detached from the complexity of our contemporary urban settlements. Arcosanti, Dongtan, and Masdah represent some relevant modern examples of such an autarkic, vision of sustainable probity.

Neither the hermetic constructs of 'eco-cities' nor the quantitative necessities of carbon reduction contribute much to our present urban environments. In Qualitative and quantitative traditions in sustainable design (Brennan 2011), we researched a series of themes around autarchy, context and adaptation [4].
In this paper we focus further on adaptive design as a practice that has significance in both urban and sustainable discourses. Usually the term is applied in connection with anticipating the effects of climate change and is essentially precautionary in nature (Newman et al, 2009). However the ability for buildings and their neighbourhoods to adapt comfortably over time is a vital component in sustainable urban development. Much of this discourse originates in the work of John Habraken and Open Building that celebrated the constant process of transformation in our cities and argued that buildings needed to respond proactively to such a phenomenon [5]. Allied to this was a sentiment that the process of design should be inherently multivalent and democratic. Such an approach resonates with definitions of sustainability that overtly refer to the conservation of social and economic capital as a precondition to a more responsible environmental stewardship of our environment (Goodland, 2003).

These sentiments are clearly articulated further in design discourses embodied in Alex Gordon's aphoristic 'long life, loose fit, low energy' declaration (Graham, 1972). Buildings that anticipate the process of change resonate with typologies described by Jeremy Till and Tatiana Schnieder in their book Flexible Housing (Schnieder et al, 2007). They write that 'Hard Flexibility' lies in an architectural language of sliding doors and folding partitions, allowing almost instantaneous changes in function. For the architect, it allows a more proactive, and some would remark, more controlling role in the way a building is to be used, based on a series of predefined spatial permutations. Such an approach produces distinctive form, such as the talismanic Schroeder House and remains a persuasive design methodology to architects. More difficult to define is the term 'Soft Flexibility'. To an extent it is an admission of the obvious, that designers cannot control how space is to be occupied, and should rather provide breathing space for change and adaptability. For this to be facilitated a loose sensibility to planning and building services is called for, where adaptability is enabled through the intelligent provision of space rather than the specifics of a technological solution.

The relationship of sustainable design to adaptability is often raised but rarely investigated in any depth. There are some notable exceptions including research by the Adaptable Futures network who have concentrated primarily on explaining its value in respect of the sustainability of economic capital as well as resource conservation (Manewa et al, 2009). Figure 1 summarises the key benefits of soft adaptable architectures in relation to key sustainable metrics. (Fig. 1)

This paper will discuss these issues through two case studies situated in very different environments in Scotland, one an inner city neighbourhood, the other a peripheral suburb. However, they also engage with universal urban issues such a transiency, sprawl, and post-industrial development. The first is based on a reflective pedagogy revolving around postgraduate study in sustainable design at the University of Edinburgh. Here the intention is to integrate sustainable design strategies such as reconstruction/deconstruction methodologies in embedded urban contexts. It consciously steers a course away from the sustainable shorthands of the standalone 'ecovillage' and quantitative carbon reduction methodologies.

Edinburgh is normally perceived as an affluent capital city boasting a seamless and unique historic townscape that secures UNESCO world heritage status. However lying outside the historic core are neighbourhoods that display many of the challenging characteristics we see in many inner cities elsewhere. Rather than seek to create an 'eco-enclave' the focus of the masters design programme was to work through infrastructure and network [6], selecting the main thoroughfare to Edinburgh's seaport at Leith for investigation. Along this major artery, multiple constituencies of students, immigrant communities and an older settled population live in a series of dense apartment blocks. As an area, it resists wholesale gentrification and as a result has a rich and complex set of needs and aspirations.

The urban grain of the area as viewed from Leith Walk is one of traditional stone built apartment blocks with commercial use to the street. Behind this façade however, is more chaotic, characterised by a wholesale demise of industrial activity and rationalisation of railway land. This leads to a complex canvas of a static, older population whose employment opportunities have materially evaporated. In contrast, Asian and East European migration has ensured that commercial activity along main street is vibrant and in a constant state of flux (Fig.2). The pedagogic aim of the investigation was explicitly to understand how design methodologies might contribute towards community cohesion through adaptable and sustainable architectural propositions. This acknowledges Nabeel Hamdi's description of community as defined by culture, work, resistance, interest and place (Hamdi, 2004). The CultureBox project by students Mairi Kyprioti and Azar Farshidi, deliberately eschews fixed accommodation for a means of cultural and community use that starts with the provision of mobile enclosures for hire around the district. At the heart of the neighbourhood adjacent to the local library lies a more substantial building that blends defined community use such as café and resource centre with an open multipurpose space.

This multipurpose space can act as meeting, performance, workshop and maintenance accommodation, but no fixed programme is envisaged. In terms of architectural precedent, it resonates with the conversion of Glasgow's Tramway Theatre or the Half Moon Theatre project in London both of which are both loose and utilitarian in nature [7]. If we follow the 'loose fit' dictum and the writings of Stuart Brand in How Buildings Learn then simple, rectilinear space generous in plan and section is a good example of providing a framework conducive to soft adaptation (Brand, 1994). In a functional sense, much of the building programme could as easily be accommodated within an anonymous steel framed shed. As Christopher Alexander would have it:
"Even when experts make buildings that are adaptable, the result is still trivial because the unique particulars are still subservient to the common generalities"
(Alexander, 1979)

We propose that the deployment of a series of sustainable design strategies rather than technologies can address the issue of the 'unique particular' that Alexander alludes to. Popularised by Stewart Brand but originally based on research by Frank Duffy of DEGW, the concept of adaptable shearing levels of change can be applied to the building envelope, where different constructional, servicing and programmatic systems interact at radically different rates (fig. 3). Those building elements that require repair and replacement most often should contain the least energy intensity and resource impact. In the case of the Culture Box, a permanent steel frame supports a heavy thermal mass planted roof interspersed with rooflights. Its function is to act as garden, water collection device and provide a degree of inertia against excessive solar gain. The external walls however are easily repaired and replaceable with an emphasis on low impact materials and environmental control through building mass and thermal inertia. Where, perhaps the building squares the circle of having both a singular urban identity as well as an almost chaotic embrace of the unexpected is in its architectural realisation (fig.4). Permanent elements such as the roof garden, contrast with a demountable aesthetic to the façade and access assemblies. It demonstrates an adaptability and complexity both in the building programme and layered construction that also reflects well the complexities of the neighbourhood's physical context and culture. It signifies a substantial community resource, yet one that seems through its fabric, open to adaptation as the city itself goes about reinventing itself.

The second research case study is located in a suburban context on the edge of the Highland city of Inverness. The challenges of making the suburb sustainable are well documented and again often fall in well worn narratives of the autonomous eco village, that whilst being beacons of environmental virtue have little scope in transforming both existing and planned dispersed development [8]. There are of course more nuanced readings; the Worlds Apart project for instance sees the suburb as a visually and culturally rich environment. In John Archer's Suburban Aesthetics is not an oxymoron (Archer et al, 2008), he contrasts the work of Margaret Crawford in Everyday Urbanism who writes of mundane space not being an aesthetic problem to be resolved by professionals but a zone of possibility and transformation (Chase et al, 2008). This looseness is not necessarily manifested through a strong visual aesthetic but nevertheless has the possibility to accommodate an adaptive housing model.

Such a framework is important as the complex household patterns we now see that have long moved on from a past imagined conception of the nuclear family. In Scotland, less than 7% of households are families with more than 4 members, whilst 40% of all household relocations are because of dwellings no longer fulfilling user requirements (Scottish Government 2006, 2008). If we see the formation of stable communities as a characteristic of sustainable settlements, then the dwellings we design need to become more adaptable. The WholeLife house by Brennan and Wilson architects is located on the southern suburban edge of Inverness, a city that has undergone in the last 10 years a population increase of 25%. Growth has been accommodated in new low density housing estates around the edge of the city, characterised by poor local amenity and public transport provision. The housing typologies overwhelmingly cater to a family market that in reality is not at all significant in terms of any household demand demographic.

In part, to address the issue of such peripheral growth, plans for a housing fair were introduced in 2006. The favoured model was based on a Finnish blueprint, the Asuntomessut that promotes innovation and quality in residential design and construction. The process was initiated by a design competition where individual architectural practices partnered with housing developers to build 54 exemplar buildings. Scotland's Housing Expo opened in 2010 and received 30 000 visitors. Much of the housing is designed around well-established practices of carbon reduction with some emphasis on embodied energy use. The WholeLife house instead endeavours to challenge perceptions of the suburb as a residential monoculture.

Current census data suggests in well-connected rural and periurban areas that 25% of the workforce is home based. Some commentators have made positive linkages between sprawl and peripheral development (Smyth et al, 2001). In East Anglia, youth migration has been balanced by an influx of the 'established young'. This cohort apparently seeks a hedonistic combination, of open space, recreational opportunity, along with a clean environment. In return according to Jan Barstad, are attendant increases in employment and economic development (Barstad, 2001). An imperative to enable new development requires an engagement with programmatic issues in respect of an anticipatory flexibility.

The WholeLife house is a clear example of Till and Schnieders' definition of 'soft flexibility'. Like the CultureBox it holds that sustainable strategies start in the fundamental spatial design of the building rather than an applied technological layer. The building is designed for a wide spectrum of different uses. It achieves this through a multipurpose annexe block accessed through a common lobby to allow a degree of separation from the main house (fig.5). The wing coupled to a more traditionally designed house can function as office, workshop, a self-contained apartment for young and old residents as well as extra bedroom accommodation for larger households (fig.6). In terms of fixed programme, it is deliberately loose; the permutations and combinations are complex and intentionally not predictive. This addresses a challenge always inherent in more circumscribed live-work developments with demarcated boundaries between domestic and work activities.

Many transformation strategies for suburban environments involve some form of 'reinvention', to open out internalised households to a more communal structure. Such a utopian model is embedded in many ecological and sustainable narratives.

John Brennan,
University of Edinburgh , UK

They remain speculative on account of being predicated on a willingness of households to sacrifice privacy for environmental probity [9]. Often, low-density peripheral housing is attacked because of its visual and spatial monotony. New Urbanist solutions can, in effect, paint a more picturesque canvas of our urban edges. It does not address a programmatic uniformity that restricts change and reinvention that contribute so much to the life of our inner cities (Winstanley et al, 2003). The WholeLife house embeds itself in suburban culture, for instance its form is not radically different from surrounding housing typologies. Programmatically, it is ideologically pragmatic, not requiring any sudden or profound change in the way people choose to configure or order their households. The WholeLife house intends to facilitate complex, unpredictable household and work patterns that start to transform our suburbs from the bottom up (fig.7).

This paper has a critical stance to deterministic and instrumental metrics when exclusively used to define sustainable development. Although our examples of the CultureBox and WholeLife House seem to originate from very different contexts, they both endeavour to start the process of layering and adaptation at the scale of individual building. Much of what makes many of our cities pleasurable comes from a fine-grained reinvention and programmatic process of patination. We therefore suggest that we should start to enhance our urban environments behind the boundary of the building envelope. In here we can make environments, even at the scale of household, can adapt with ease to provide a firm foundation for a resilient and pleasurable city.

'Quanto m'occorre dalla natura, pare a me che la città com'é constituita da molte famiglie, così ella in sé sia quasi come una ben grande famiglia; e contro, la famiglia sia quasi una picciola città.' Alberti, De iciarchia, III:
(As far as it seems to me from Nature, it seems to me that the city, as it is made up of many families, so is like one very large family; and on the contrary, the family is like a small city.)

Notes

[1] Andrew Blowers in Environmental policy: ecological modernisation or the risk society in "Urban Studies" refers to sustainability as a concept 'whose strength lies in its vagueness'.

[2] Tony Becher posits a framework encompassing disciplinary clusters, and differentiates between bodies of 'hard' and 'soft' knowledge. He identifies Engineering for instance,as an academic discipline as 'hard applied' being perceived as pragmatic with purposeful criteria for judgment. Architecture very much lies in 'soft' territories having holistic qualities, and being value laden but also displaying a lack of consensus as to singular discipline characteristics.

[3] The authors' logics include the categories of 'eco-technic, eco-centric, eco-aesthetic, eco-cultural, eco-medical and eco-social'.

[4] This book chapter explains in more detail key differences between qualitative and quantitative traditions and how they may be bridged, primarily through interpreting the work of Joachim Habermas.

[5] There are a multitude of publications by Habraken but a useful one in this case might be: Control of Complexity (Habraken, 1987).

[6] Key commentators on this are engaged with infrastructure and knowledge networks. Although not with a declared sustainable agenda, Splintering Urbanism by Graham and Marvin contend that in both developed and developing contexts, we have hit a high water mark in terms of centralised infrastructure provision.

[7] Glasgow's Tramway Theatre, designed by Zoo Architects in 2000, is an innovative conversion of large shed structures in Glasgow to form a new venue for the Citizens Theatre. The Half Moon theatre [1979-1985] by Florian Beigel is a good example of simple, adaptive multi use spaces with high levels of architectural resolution.

[8] A good example of the genre is Superbia: 31 Ways to Create Sustainable Neighborhoods (Chiras et al, 2003)

[9] An essential reference is Ecological Utopias: Envisioning the Sustainable Society (Geus, 1999)

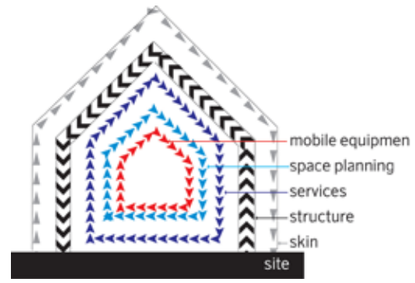
Bibliography

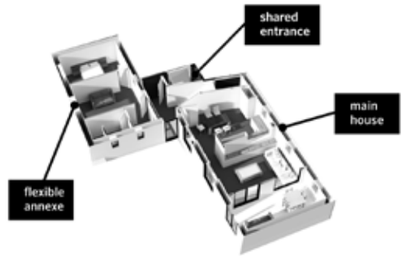
Alexander, C., The Timeless Way of Building, Oxford University Press, 1979.
Archer, J., Brooks, D., Bruegmann, R., Worlds Away, Walker Art Center, 2008.
Barstad, J., Väyrynen, A.N.a.J., Lowland crofting and urban sprawl: New aspects to sustainable forest management in local and rural development, in "Joensuu: European Forestry Institute", vol 36, 2001.
Becher, T., Trowler, P., Academic Tribes and Territories: Intellectual Enquiry and the Culture of Disciplines, Open University Press, Buckingham, 2001.
Blowers, A., Breheny, M. Sustainable urban development: the political prospects. Pion, London, 1992.
Brand, S., How Buildings Learn: What Happens After They're Built, Viking, New York, 1994.
Brennan, J., Quantitative and Qualitative Traditions in Sustainable Design, in The Aesthetics of Sustainable Architecture, 010 Publishers, Rotterndam, 2011.
Brundtland, G., Environment World Commission on, and Development. Our common future, Oxford University Press, Oxford, 1987.
Chase, J., Crawford, M., Everyday Urbanism, Monacelli Press, New York, 2008.
Chiras, D., Wann, D., Superbia: 31 Ways to Create Sustainable Neighborhoods, New Society Publishers, 2003.
Ellen, N., Postmodern urbanism, Princeton Architectural Press, New York, 1999.
Farmer, J., Green Shift: Changing Attitudes in Architecture to the Natural World, Architectural Press, Oxford, 1999.
Geus, M., Ecological Utopias: Envisioning the Sustainable Society, International Books, 1999.
Goodland, R., Sustainability: human, social, economic, and environmental, John Wiley, London, 2003.
Graham, G., et al. Designing for survival, the President introduces his long life/loose fit/low energy study, in "RIBA Journal" p.374-376, 1972.
Guy, S., Farmer, G., Reinterpreting sustainable architecture: the place of technology, in "Journal of Architectural Education", Vol 54. No.3, (2001).
Hagan, S., Taking Shape: A New Contract Between Architecture and Nature, Architectural Press, Oxford, 2001.
Habraken, J., Control of Complexity, in "Places", 4(2). 1987
Hamdi, N., Small Change: About the Art of Practice and the Limits of Planning in Cities, Earthscan, London, 2004.
Liddell, H., Eco-minimalism : the antidote to eco-bling, RIBA Publications, London, 2008.
Lynch, K., The Image of the City. MIT Press, Chicago,1960.
Manewa, A., Pasquire, C., Gibb, A., Schmid, R.,Towards economic sustainability through adaptable buildings, in Smart building in a changing climate, Techne Press, Amsterdam, 2009.
Newman, P., Beatley, T., Boyer H., Resilient Cities: Responding to Peak Oil and Climate Change, Island Press, 2009.
Oliver, G., Responsive Practice, in Architecture and its ethical dilemmas, Taylor & Francis, London, 2005.
Schneider, T., Till, J., Flexible Housing, Architectural Press, London, 2007.
Scottish Government, Housing Standards for Scotland Key Trends Summary 2007-8, Edinburgh, 2008.
Scottish Government Social Research. Scottish housing aspirations survey, Edinburgh, 2006.
Winstanley, A., Thorns, D.C. & Perkins, H.C. Nostalgia, Community and New Housing Developments: A Critique of New Urbanism Incorporating a New Zealand Perspective in 'Urban Policy and Research', 21(2), 2003.

List of Figures

1. Table showing relationship between sustainable metrics and adpatable design strategies.
2. Social and community networks in Leith, Edinburgh. Illustration by Azar Farshidi and Mairi Kyprioti
3. Shearing levels of change in building envelopes. (After Brand, 1994)
4. Leith CultureBox external view. Illustration by Mairi Kyprioti and Azar Farshidi
5. WholeLife House, layout of fixed and flexible wings. Illustration by author.
6. WholeLife House, some possible living configurations in flexible annexe. Illustration by author.
7. WholeLife House, external view as built showing location of fixed and flexible wings. Photograph by Nigel Rigden.

sustainable metrics	adaptive strategies
Social Capital **'People + Resilience'** • Stable communities and households • Mutual benefit, cohesion, connectedness	• Adaptive housing stock. • Community facilities adaptable to changing priorities and needs in neighbourhoods • Flexible building programmes reduce commuting and travel impacts
Economic Capital **'Profit + Productivity'** • Anticipation, caution, maintenance of capital. • Value generation. Allocation, efficiency & scale	• Adaptive workplaces change and mutate to reflect fluid trading conditions and business need. • Rebuilding costs reduced through adaptive building systems and assemblies • Loose building programmes to allow juxtaposition of different use classes.
Environmental Capital **'Planet + Diversity'** • Live within carrying capacity of planet. • Promote and preserve biodiversity • Technology can promote or demote environmental capital.	• Life cycle resource consumption reduced through adaptive building systems and assemblies • Flexible building programmes reduce commuting and travel impacts





Bing Chen
Xi'an Jiaotong-Liverpool University, UK

'Education for Sustainable Architecture: Professional Competencies and Responsible Ethics'

1. Introduction

Nowadays sustainability is acknowledged as an overarching design driver for contemporary architecture, civic design and any other built environment disciplines. However, as such principle becomes more all-embracing, it is unlikely to reach a complete consensus on action plans across all stakeholder groups (or even for people from building professionals) in the near future. Necessary communication between them also remains remote due to the lack of a common language. In a collaborative design or decision-making process, therefore, different stakeholders often prefer to interpret the underlying issues from different dimensions, by different procedures, through different formats and to different extents, taking into account their intrinsically varying incentives.

In return, previous studies (Roaf et al., 2004) show that there are often significant differences (sometimes about half) between the predicted, simulated performance of many new buildings or cities during their design phase, and the actual energy consumption and carbon dioxide emissions in their operational phase. In other words, although the city infrastructure could be designed towards sustainability standards, misusing them may lead to unsatisfactory outcomes. Likewise, the Khazzoom-Brookes postulate suggests that 'energy efficiency reduces price to the consumer who then will either increase demand through price elasticity or choose to spend their increased disposable income on other energy-consuming goods and services' (Sayce et al., 2007).

To achieve desirable results (i.e. energy saving and carbon dioxide emissions reductions) and thereby tackle climate change, there is an emerging need to engage people in re-evaluating everything they do with a broader public purpose in mind and re-appraising their daily life in a brand new way. Their awareness of sustainability issues and willingness to change their lifestyles towards greater environmental sensitivity will decide how far they want to go to save energy, reduce carbon dioxide emissions and recycle waste and so on. Such changes in 'attitudes', 'social values' and 'inspirations' will heavily depend on 'vast campaigns of education, debate, and public participation' (Bruntland, 1987). To facilitate this sustainability transition, the United Nations 'Decade of Education for Sustainability' (2005-2014) was launched in January 2005 and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) has been mandated to work with educators to support their efforts to incorporate sustainability principles in their courses and curricula (Gacia et al., 2006).

Since architects, urban designers and other built environment professionals often play an important role in the interpretation and implementation of sustainability principles, they should be trained to have action competencies (i.e. skills, values and knowledge base, etc.) to help industry and society both respond to the sustainability agenda and drive it forward. To see whether this target has been successfully met, this paper provides a snapshot of current teaching and learning practices within built environment education, using case studies in the UK and China.

The target group consists of university students studying architecture or other built environment related disciplines, which represents a revised dualism – both today's users and tomorrow's designers of the built environment, though the affiliation between their two roles is also mutually dependent (Hill, 1998). The key argument of this study is that, since these students will contribute to both problems and solutions in tackling climate change, they need to be educated on sustainability principles as the first step to making changes. More specifically, they should be equipped with not only professional knowledge (e.g. sustainable design competencies) but also responsible ethics and capabilities (e.g. ecological literacy) to educate other stakeholders into more genuinely collaborative roles in a collaborative decision-making process.

2. Case Studies

Two case studies have been conducted so far, one in Sheffield University School of Architecture, UK, and the other in Xi'an Jiaotong-Liverpool University (XJTLU) Department of Urban Planning and Design, China. Sheffield University has been highlighted as one of the architectural schools in the UK 'that has adopted an exemplary approach to teaching sustainability, in terms of the school's overall strategy and its current and programmed implementation' (Fowles et al., 2003). Compared to Sheffield University that has established a good track record in respect of teaching sustainable architecture, the built environment programmes at XJTLU (including architecture, urban planning and design, civil engineering) are still under development. However, this also provides a good opportunity for XJTLU (and other new academic institutions) to use sustainability principles to underpin their built environment programmes and thereby promote the case for education for sustainable development (EfSD) as part of the university's long-term vision.

2.1 Professional Knowledge/Competencies

To convey the sustainability principles and relevant design strategies efficiently, Sheffield runs the studio projects in parallel with sustainability lectures, workshops and surgeries, which are designed to feed into the design work. This approach focuses on the studio-based learning-by-doing environment as the place where the synthesis of all sustainable design considerations takes place. Although the strategy sounds rigorous theoretically, the success of implementing this pedagogic principle will depend on the coordination (or collaboration) between lecturers (sometimes lacking design experience) and studio tutors (often practical architects who have less or no research background). Since lecturers often only have expertise in an area related to sustainability, most research-led lectures, workshops or surgeries they provide are focused on certain topics (e.g. 'solar design', 'thermal comfort', 'acoustics', etc.). It is unlikely that students within such learning environment would have a full picture of sustainable design in their minds. Some important issues remain unclear such as where to start designing a sustainable project and where to stop; what design measures should be prioritised in a given urban context and why; etc. Then it becomes a challenge for studio tutors, who might even have less understanding of sustainable design issues (e.g. performance driven issues at the building or city level, etc.) than lecturers, to emphasize the integration of these sustainability concerns and to balance alternative design strategies in a project-based design process.

A survey conducted in Sheffield provides further evidence of the above concerns (Chen et al., 2008). It is found that, although architectural students have a general awareness of sustainable design principles, which might nurture a learning environment that can facilitate sustainability-related discussions or similar, they have not been equipped with enough competencies to implement these principles in practice. For instance, research shows that some building environmental assessment methods (e.g. BREEAM, the Code for Sustainable Homes, etc.) can be used to inform design by transforming the qualitative decision-making procedure to a quantitative one (Chen and Pitts, 2006). By comparing different environmental issues and the corresponding mitigation measures according to their weighting factors (a.k.a. relative importance), environmental impacts (and possibly benefits) of different design strategies can be made visible to all relevant actors. This will facilitate communication across all stakeholder groups and thereby improve the efficiency of collaborative designs. However, students in the target group have not been made aware of such way to approach new policy and legislation in their lectures, workshops and surgeries. As a result, they consider BRE's environmental assessment methods as specialised tools which are tailored only for professional consultants so that they would often like to leave their design proposals to be assessed with the benefit of hindsight.

It is also found from the survey that many students would like to take the sustainability-related lectures, workshops and surgeries as a technology-focused extension for their existing design tutorials. In order to please their tutors in the studio-based learning environment and thereby achieve a good mark, students often feel obliged to visibly demonstrate commitment to sustainability in their design outputs. For instance, they would prefer using 'visible' technical add-ons (such as Photovoltaics, micro-turbines, etc.) to 'invisible' measures (such as high standard insulation) though the former ones might prove not to be the best environmental options in terms of cost-benefit efficiency. In fact, students have been taught throughout lectures, workshops and surgeries that, to achieve the objective of energy saving and carbon dioxide emissions reductions, all buildings need to be designed to be energy efficient first in order to minimise their energy needs and 'passive' design strategies should be involved before any other techniques are added on.

To summarise, there is often a gap between research- and design-led teaching and learning activities in the current built environment education, which may lead to 'a triangle of expectations' – from government policy, employers' expectations, and the pedagogical expectations of higher education (Hamza and Horne, 2007). In order to fully integrate sustainable design into a curriculum, it is vitally important to build up links between research work and design work.

In XJTLU, the pedagogy in the Department of Urban Planning and Design is designed to address the above concerns. The curriculum incorporates collaborative and interdisciplinary teaching and learning as a key factor to facilitate the EfSD. For instance, three modules (i.e. 'Environmental Sustainability', 'Spatial Design and the Built Environment' and 'Geographic Information Systems') have been linked together – besides running the studio projects ('Spatial Design and the Built Environment') in parallel with sustainability lectures ('Environmental Sustainability') and GIS tutorials ('Geographic Information Systems'), one identical site has been chosen for further studies. This allows students to have an in-depth analysis of a given urban context and helps them understand the iterative procedure of using research to inform design in live projects. Figure 1 shows the information flow of one round of such procedure. Lessons learned from the sustainability lectures can be immediately fed back to the studio project – interpret policy or regulations and identify environmental issues to be addressed in the design brief, decide project specification based on baseline or benchmark studies, predict impacts and formulate mitigation measures, propose and evaluate different design strategies from a socio-economic perspective (e.g. participatory decision-making and Cost-Benefit Analysis, etc.), and finally provide feedback to the starting point of the next round. As a computer-aid design tool, GIS is introduced for presenting and analysing information and thereby facilitating knowledge transfer.

One important learning outcome of this integrated design project is to help students develop skills to 'enquire critically and think systematically about problems in a way that allows them to explore the associated complexity' (Hayles and Holdsworth, 2008). The outputs, environmental assessment reports for 'Environmental Sustainability' and project design posters for 'Spatial Design and the Built Environment', also mirror the necessary documents to be prepared for planning permissions in the procurement processes of any live project.

2.2 Responsible Ethics

As a process oriented concept, sustainability concerns decisions being made in the whole life cycle of a project, from cradle to grave (including every stage in planning, assessment, design, construction, operation and maintenance, and decommissioning of projects) and upstream and downstream (reflecting on actors' 'everyday assumptions, habits of behaviour, structures of feeling and expectation' (Blewitt, 2006)). To encourage students to 'look beyond a particular topic and see the bigger picture', EfSD needs to be incorporated into daily activities in 'an inter-disciplinary and inter-cultural setting' (Hayles and Holdsworth, 2008).

Previous studies show that people's current living requirements are far beyond the long-term carrying capacity of the earth, for instance people in the UK are now consuming 300% more than the planet can sustain in the long term if everyone had the same lifestyle (GFN, 2012). Such principle can impact carbon neutral designs and results in unsatisfactory outputs – by using advanced technologies, buildings and cities could be designed to be carbon neutral theoretically based on a 'standard occupancy/use' condition, yet misusing them may result in unsatisfactory outcomes. As indicated by Hill (1998), the term 'user' is probably more appropriate than occupant, occupier or inhabitant as it implies 'both positive action and the potential for misuse'. Likewise, Gacia et al. (2006) also argue that 'the movement towards sustainable development depends more on the enlargement of one's moral sensitivities than on the growth of scientific understanding'.
Clearly there is an urgent need to enable transformative learning in the context of EfSD. Transformative learning, as defined by Mezirow (Blewitt, 2006), is when people's 'meaning schemes' (referring to patterned differences in specific knowledge, beliefs, attitudes, value judgements and feelings) and meaning perspectives change as a result of experience and self-reflection. By incorporating this principle into the built environment education, students (as well as staff) can develop a vision of sustainable future so that as empowered and engaged citizens they would 'become critically aware of how and why their assumptions constrain the way they perceive, understand and feel about the world' (Blewitt, 2006; Hayles and Holdsworth, 2008).

Further studies have been conducted in Sheffield and XJTLU to explore the status of perspective transformation under the current built environment education programmes. It is found that, compared to students form other disciplines, students studying architecture or other built environment related disciplines have not been better educated on sustainable living principles.
According to the online Ecological Footprint Quiz (GFN, 2012), most target students from Sheffield need more than two earths' resources to sustain their existing lifestyles and some of them need six (Chen and Pitts, 2006); while for target students from XJTLU, their per-person resource demand (Ecological Footprint) is also larger than the amount of resource supply (Biocapacity). Indeed the results mirror the average personal Ecological Footprint of the UK and China respectively in time.

It can be concluded that, to a great extent, the current built environment education programmes have not instilled environmental friendly citizenship practices into these students – their lifestyles require much more resources than what the bio-productive capacity of the biosphere can supply. This situation could worsen once these students graduate from the university and become more financially independent. Then the important question remains – if these built environment professionals, who are supposed to be educated on sustainability principles as the first step to making changes, felt reluctant to change their lifestyles (referring to patterned differences in knowledge, attitude, behaviour and some consequent issues, etc.) towards greater environmental sensitivity, how would they be capable of educating other stakeholders, often with fewer incentives and less specialist knowledge, into more genuinely collaborative roles?

To address the above issues, the method of action learning has been introduced at both Sheffield and XJLTU to facilitate EfSD. Although the concept itself may have many variations, all forms of action learning share the elements of 'collegial teams discussing, planning, resolving and taking action on real problems – and learning through questioning and reflection' (Hayles and Holdsworth, 2008). In XJTLU, a student-led campaign called 'Greening the Campus' has been launched as part of the problem-based teaching and learning plans of the module 'Environmental Sustainability'. By providing an avenue for addressing matters related to sustainability in an ad hoc manner, such activities can enable students to see the university as a leader in sustainable practices and provide strong learning experiences through action (Karol, 2006). As indicated by Friedman (2008), 'the university campus and the physical environment in which the students are placed during the formative years of their adult lives can affect later years and instil good citizenship practices'.

In addition, since XJTLU is an open-campus university located in a higher education town, students taking the campaign have also been encouraged to walk out of the campus and communicate the concept of changing lifestyles towards greater environmental sensitivity to more locals. It is hoped that this hands-on approach will help students better understand a fact that – in reality, educating other stakeholders into more genuinely collaborative roles does not happen spontaneously in a participatory

decision-making environment; instead, these people need to be provided with understanding about the need for change, and with tools to help them change. By exploring the priority variances across different stakeholder groups involved in a sustainable design project (i.e. 'Spatial Design and the Built Environment'), such activities can also equip students with responsible ethics and capabilities to tackle complex sustainability-related issues arising in a collaborative design process. To make informed decisions, they need to compare different design options and achieve a dynamic balance between what is theoretically possible and what is practically most desirable though it needs to be directed intrinsically towards problem orientation.

3. Discussion and Conclusions

It is found from this research that current built environment education frequently overlooks that adapting to climate change could involve carbon-intensive actions – though students studying architecture or other built environment related disciplines have had a general awareness of sustainability principles, it has so far made limited impact on their design protocols (as tomorrow's designers of the built environment) or lifestyle choices (as today's users of the built environment). To solve this problem, there is an urgent need to nurture an active learning environment which facilitates innovative education reform or similar. This requires the existing pedagogy (including curriculum and life-long learning programmes) to be reformed first from a revolutionary perspective, using the 'systems approach', 'participatory engagement' and the 'precautionary principle' (Gacia et al., 2006). To avoid teaching sustainability with an environmental management focus, the new pedagogy should encourage students to develop their competencies and ethics for partnerships, participation and action in a collaborative design process (Hayles and Holdsworth, 2008). This will also help them act strategically, behave ethically, and think within the context of sustainable development (Gacia et al., 2006).

Based on the case studies at Sheffield and XJTLU, some strategies, such as integrated curricula design and action learning method, have been proposed to facilitate such change in higher education – 'to pass on knowledge and culture, which implies a belief in the future, and hence the need to safeguard the future' (Karol, 2006). However, their impacts on EfSD need to be measured with further studies from a longitudinal perspective.

The next step that XJTLU School of the Built Environment (including Architecture, Urban Planning and Design, and Civil Engineering) will take is to simulate an interdisciplinary working environment by encouraging students from different built environment disciplines to participate in a live project, which will help explore, through practice, how different discipline contributes to problems and solutions in a collaborative design process. By working in a multi-disciplinary environment like this, students can also achieve a holistic appreciation of sustainability, and thereby improve their understanding of the importance of teamwork and the role they and others will play in relation to each other in the development of sustainable practices and the procurement of sustainable buildings or cities.

References

Blewitt J. The Ecology of Learning: Sustainability, Lifelong Learning and Everyday Life. London: Earthscan. 2006.

Bruntland G., ed. Our Common Future: The World Commission on Environment and Development. Oxford: Oxford University Press, 1987.

Chen B. and Pitts A. Architects' propensity for sustainability: knowledge transformation through education. In «PLEA2006 Conference Proceeding». Geneva: Vol1, 629-634, 2006.

Chen B., Pitts A. and Ward I. Sustainability-related educational programmes for sustainable housing design. In «PLEA2008 Conference Proceeding». Dublin, 2008.

Fowles B., Corcoran M., Erdel-Jan L., Iball H., Roaf S. and Stevenson F. Report of the Sustainability Special Interest Group (Architectural Education). London: CEBE, 2003.

Friedman A. Forward in Eco Residences – eco-friendly student accommodation. University Partnerships Programme (UPP). Lancaster: Lancaster University Press, 2008.

Gacia F.J.L., Kevany K. and Huisingh D. Sustainability in higher education: what is happening? Journal of Cleaner Production 14:757-760, 2006

GFN (Global Footprint Network). Ecological Footprint Network: Advancing the Science of Sustainability. [Online]. < URL: http://www.footprintnetwork.org/ > [05 March 2012]

Hamza N. and Horne M. Educating the designer: An operational model for visualizing low-energy architecture. Building and Environment, 42(11): 3841-3847- 2007

Hayles C.S. and Holdsworth S.E. Curriculum Change for Sustainability. Journal for Education in the Built Environment, 3 (1): 25-48, 2008

Hill J. ed. Occupying Architecture: Between the architect and the user. Routledge: London and New York, 1998

Karol E. Using campus concerns about sustainability as an educational opportunity: a case study in architectural design. Journal of Cleaner Production, 14: 780-786, 2006.

Roaf S., Horsley, A. and Gupta R. Closing the Loop: Benchmarks for sustainable buildings. London: RIBA Enterprises Ltd, 2004.

Sayce S., Ellison L. and Parnell P. Understanding investment drivers for UK sustainable property. Building Research & Information, 35(6): 629-643, 2007.

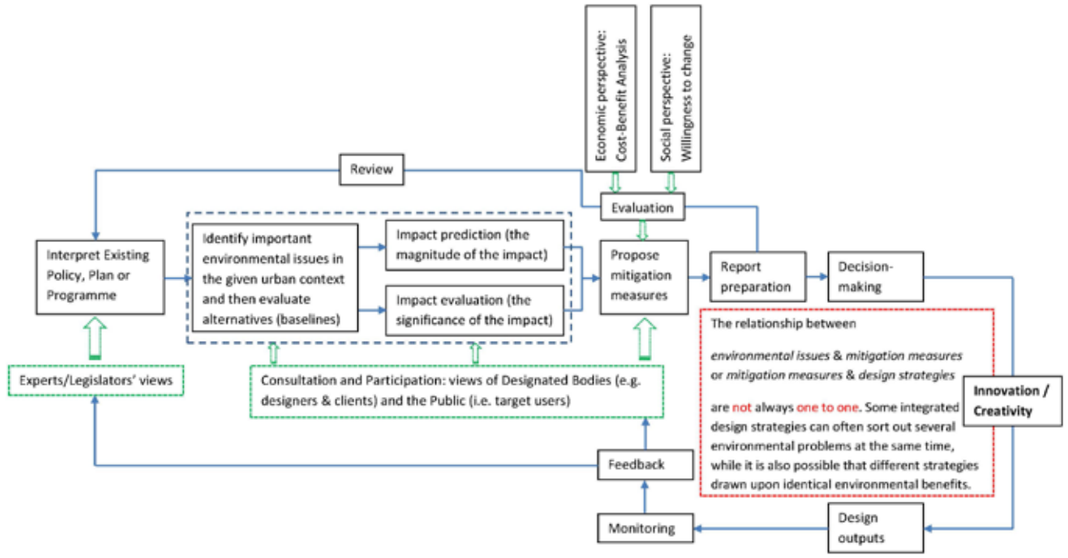


Figure 1: Information flow – one-round of using research to inform design

Mike Christenson
North Dakota State University,ND, US

Mixing Algorithms in Urban Analysis and Transformation

In his research addressing tactics within architectural design studios, Donald Schön identified the possibility of "imposing an arbitrary discipline" as a means of reframing design problems. Schön noted that designers imposed arbitrary orders (such as grids) as a means of overcoming "stuck" design situations. Schön implied that these arbitrary impositions operated like design moves lacking normative justification. The fact that unintended consequences follow arbitrary impositions is not in itself remarkable. However, the possibility of arbitrary design moves which can result in positive value has important implications for both architectural design and analysis. For design, the possibility implies that successful designers are not necessarily obligated to justify design moves, provided that the designer is able to discern value in unintended consequences, and that the designer is able to act in response to identified value. For analysis, it implies that arbitrary impositions (of, for example, arbitrarily-sized grids onto maps) may be capable of provoking valuable insight, provided researchers remain sufficiently attentive to the accidental juxtapositions which can result.

This paper describes research into the possibility of mixing algorithms, i. e., programmable functions designed to apply arbitrary discipline to source materials or artifacts, resulting in new materials or artifacts characterized by accidental or unintentional relationships. Source materials may include contemporary or historical photographs or maps, urban plans and architectural drawings, as well as digital or physical models.
In this paper, I show that if source materials concerning an existing city are subjected to arbitrary impositions, the newly produced materials include accidental adjacencies which can form a basis for new assertions about the existing urban condition. Significantly, and distinct from operations such as the "indeterminate functions" proposed by Daniel Herbert in a 1997 paper, the imposition of arbitrary discipline does not require randomization. Algorithms are discussed, which while non-random, can result in the same kind of accidental relationships as would otherwise be produced by randomizing processes. Thus, programming of the algorithms into readily available software (e. g., Adobe Photoshop's Actions, or AutoLISP running within AutoCAD) is generally straightforward.

Discerning value within the found or arbitrary.

The value of serendipity in science is well-known (Foster and Ford, 2003; Roberts, 1989). The idea that explicitly stated hypotheses are unnecessary in order to analyze datasets for patterns, in turn informing knowledge, is also well-known and is increasingly common as a scientific practice (Halevy et al., 2009; Kell and Oliver, 2004). In design disciplines, including architecture and urban design, serendipity and accident are acknowledged as legitimate influences (Kolson, 2001; McLachlan and Coyne, 2001; Hayles and Mulder, 1998; Lynch, 1972). To successfully incorporate accident and serendipity into research and design, it seems necessary for researchers and designers to remain alert to inherently dynamic situations and ready to bring interpretive tools to bear on discoveries as they happen. Successful researchers and designers can recognize value in found situations, even (or perhaps especially) if those situations do not succumb to a priori explanations, and even in the absence of explicitly stated hypotheses, search criteria, or methodologies: they can discover value without necessarily knowing in advance what they were looking for (Rosenman, 1988).

Given this background, I make two primary assumptions concerning urban form and representation. First, I assume that urban form can be legitimately treated as a found condition which doesn't require the explicit formulation of hypotheses in order to be analyzed and transformed. This assumption is neither new nor controversial. The analysis and transformation of urban form constitutes a paradigmatic example of Rittel and Webber's "Wicked Problem," i. e., one which defies a consistent approach to problem-solving (Rittel and Webber, 1973). The world's cities are characterized by morphological relationships resulting from people of divergent opinions making decisions over time in pursuit of often conflicting priorities; that our largest cities should as a result appear accidental is not at all surprising. To restate, I assume that urban form can be productively analyzed as a collection of accidental relationships.
Second, I assume that conventional tools of urban representation often operate to actively obscure the apparently accidental nature of urban conditions. In particular, tools such as maps and photographs can tend to "tame" situations which are by nature disorganized, self-contradictory, and messy. For example, deciding to draw a figure-ground map of a city predisposes a researcher to ask certain kinds of questions and to exclude others. Photographs operate similarly insofar as they encapsulate discrete segments of the urban environment. This is not to suggest that maps and photographs should not be used in research, only to suggest that they are not neutral with respect to the kinds of questions they support.

On a deeper level, I made a third assumption, one which I call the assumption of tactical identity between analysis and design. This assumption holds that while architectural analysis and architectural design pursue different ends, their tactics are largely identical: they both involve the production of architectural drawings and models. On the basis of this assumption I allowed myself to project the demonstrated usefulness of representational tools from design situations to situations in analysis.
Following these assumptions, I set out to define a set of tools which deliberately introduce a level of disorder to the question of urban representation as a means of re-seeing the familiar.

Arbitrary discipline and imposed randomness.

The first question I considered was whether the tools were obligated to include a randomizing component. I chose to distinguish between the tactics of arbitrary discipline and imposed randomness in design. Both tactics assume the importance of serendipity, and both tactics attempt to produce "found situations" heightening the likelihood of accident.

Schön and the arbitrary.

In the 1970s, Donald Schön, then a professor at MIT's School of Architecture and Planning, participated in a study of architectural education (Balfour, 1981). Schön was interested in analyzing the pedagogical techniques of architecture studios. As a basis for his research, Schön relied on transcripts of conversations recorded by fellow researcher Roger Simmonds in a first-year MIT architecture studio. A significant portion of the recorded conversations took place between a first-year architecture student, who Simmonds pseudonymously called "Petra," and her instructor, "Quist." In one such conversation Schön identified the tactic of "imposing an arbitrary discipline" as a tactic for reframing a design problem (Schön 1981). A situation arose in which Petra encountered a problem which she was unable to resolve using known methods. Specifically, Petra found herself unable to fit discrete architectural volumes onto a sloped site. Quist's response, as recounted by Schön, was to impose an arbitrary discipline (a grid) over Petra's drawing, which transformed the original problem into a new problem capable of resolution with known techniques. Significantly, although the imposition was characterized as arbitrary, it was ordered rather than random. Except for the fact that Quist's imposition lacked normative justification, it functioned identically to a "design move," part of what Schön elsewhere called the "seeing-moving-seeing cycle" (Schön, 1992). The fact that normative justification was apparently not required implied that similar impositions could be made simply as tests, and could be expected to perform an important function in design processes.

Herbert and the imposition of randomness.

In a 1997 paper concerned with issues of metaphor and catachresis, Daniel Herbert, then on the faculty of the University of Oregon Department of Architecture, suggested the possibility of inviting randomness into architectural design processes (Herbert, 1997). In his paper, Herbert described the process of designing an addition to his own home in Eugene, Oregon. Herbert noted that computer-aided design (CAD) software included several basic operations such as grouping and scaling of components, which made it trivially easy to perform actions such as scaling architectural elements well outside of their conventional range. As an example, he described how he scaled a digital model of an existing roof dormer to 6.7 times its original size in order to fit the addition's desired width. Herbert observed that this kind of mis-scaling, while trivial from the point of view of software algorithms, necessarily resulted in unpredictable architectural relationships between form, proportion, structure, and material.

Although Herbert appreciated the value of accident in design ("its occurrence is unpredictable, its potential causes [the architect] to reinterpret current and future possibilities; its value is open yet subject to certain constraints"), he also recognized the paradoxical difficulty in introducing randomness or accident into design, which is, how can a designer cause accidents to happen? Herbert proposed that CAD software should include functions driven by random-number generators, functions "whose structure and parameters are themselves indeterminate up until the moment when they are invoked, so the designer cannot anticipate and thus influence the form of the intervention [emphasis in original]." Herbert went on to describe how such functions could be incorporated within CAD software applications then under development.

Herbert's 1997 paper defined how a randomizing intervention could take place within a process conventionally characterized by tools designed to "tame" dynamic situations. In an earlier paper (Herbert, 1995), Herbert had acknowledged the value of "media interactions" and particularly the significance of difficult-to-make translations between manual and digital media. In both cases, Herbert emphasized the hermetic nature of digital tools and the possibility of intervening with random numbers, mis-scaling, or problematic translation effects.

In the cases of both Schön and Herbert, the imposition of an external factor created unexpected collisions and conflicts which the designer was newly obligated to confront (or to choose to ignore). In Schön's case, the imposition was ordered (i. e., after the grid was imposed, it was possible to use it as an ordering device), while in Herbert's case, the imposition was random; it did not necessarily provide a new means of bringing order. Also, both cases emphasize that designers need to remain attentive to situations resulting from imposition. In Schön's scenario, the experienced studio critic orchestrated and navigated the process, while in Herbert's scenario, the computer was programmed to introduce randomness, yet the designer was obligated to remain alert to resultant collisions and overlaps, evaluating them against other possibilities. What isn't clear from either case is whether the kind of alertness required to navigate the arbitrary or accidental is necessarily different in kind, intensity, or quality than the alertness required in any other kind of design situation.

Characteristics and use of tools.

Software imposes arbitrary conditions on the work of designers and researchers. For example, to encode, process, and display a digital image requires the imposition of a pixel grid of fixed though arbitrary size. Building information modeling (BIM) software imposes an arbitrary discipline of categories and relationships, as for example when the software prohibits actions such as placing objects of type "window" in a manner that they are not hosted by objects of type "wall." In the following sections of the paper, I consider how these arbitrary conditions within software can be capitalized upon as a means of re-seeing the familiar.

Images.

Even if we allow that only a small portion of the billions of images available online directly addresses urban environments, when we consider in addition the millions of historical photographs and maps of cities, as well as the explosively expanding number of online photographs taken with cell phones and consumer cameras (Crandall et al., 2009), it's obvious that images concerning cities constitute an immense and expanding resource for researchers and designers interested in urban environments. Given as input an image of any size, it is a simple technical matter to write an image-processing script in Adobe Photoshop which systematically rearranges the image content following a simple set of rules. Figure 1 illustrates conceptually how such a script can function. The figure shows, from top to bottom: an original image, cut in regular, vertical slices; every other slice shifted vertically; slices re-inserted at a horizontally shifted position.
An image resulting from the application of this script (which I term a regular mixing algorithm or RMA), bears a degree of visual similarity to both the original image and a third image generated by randomly rearranging pixel blocks. Figure 2 shows, from left to right: an original image taken from a moving vehicle in Jaipur, India; a randomized rearrangement of pixel blocks within the image; the result of running an RMA with vertical slices; and the result of running an RMA with horizontal slices. Similarly, the script can run on maps, as shown in Figure 3, which illustrates a map of Jersey City (USA), randomized and mixed.

The act of comparing mixed images to original images, or of comparing vertically sliced to horizontally sliced images, emerges as an important step in the process of interpreting the results. Initial visual recognitions are often followed by insight concerning the original image and its subject matter. For example, relative to original images, randomly mixed images may prompt visual recognition of an overall balance of color and tone, followed by insight concerning the overall balance of (for example) solids and voids within an elevation of an urban street, or of water and land within a topographical map. Images rearranged according to a vertically-sliced RMA may, as in the case of the image of Jaipur, prompt a visual recognition concerning the prominence of horizontal bands, followed by a recognition of commonalities and differences between first- and second-floor cornices. Or, as in the case of the map of Jersey City, the vertically sliced image may prompt a visual recognition of the tendency of red and black lines to run at 45-degree angles to the image edges, followed by insight concerning the connectivity of freeways and railways within the city. The horizontally sliced image of Jaipur may prompt a visual recognition of white and black blocks of color, followed by insight concerning the disposition of "jalis" (latticed screens) within the building elevations. Certainly, it would be possible to reach any of the insights described here by other means, but the fact that mixed images are capable of prompting these kinds of insights is significant.

Digital models.

Like photographs, digital models constitute a growing documentary source for researchers, available through online resources such as Google Earth and the Google 3D Warehouse. In my research, I considered a digital model of suburban Moorhead, Minnesota (USA) as a test case. As with the question of image-processing in Photoshop, it is relatively simple to construct an AutoLISP routine which systematically slices and rearranges a solid model according to several predefined parameters. Figure 4 illustrates, from left to right: an original digital model; the model sliced and systematically rearranged according to an RMA similar to that described above; and the same model rotated by 45 degrees and then systematically rearranged. Figure 5 shows details of the models in Figure 4.

The possibility of subjecting digital models to regular mixing algorithms opens up a realm of new possibilities because of the multitude of ways in which digital models can be made visible to researchers. Digital modeling software affords a virtually unlimited space of manipulation in which views can be compared, allowing for a process of visual recognition and conceptual insight similar to that described above for photographic images.
Questions which emerge from this kind of manipulation for digital models center around whether regularly mixed models embody observable or otherwise measurable characteristics similar to their unmixed sources. For example, does a mixed model embody a disposition of built and open territory similar to the unmixed model? Certainly, the total open area remains constant, but the configurations of open space necessarily change. Similarly, one could ask whether the amount of ground area exposed to direct sunlight at a given time is the same for a mixed model as for an unmixed one. Questions like these could lead to the determination of characteristic slicing intervals, or characteristic slicing angles, for which the original and mixed models achieve maximum correspondence. Should this be possible, cities themselves could be compared according to their related characteristic intervals.

Mike Christenson
North Dakota State University,ND, US

Discussion.

The value of mixing algorithms to urban analysis does not derive from hypothesis verification, but instead from how the algorithms enable researchers and designers to re-see the familiar, thereby expanding the range of possible observations; this appears true whether a photograph or a digital model is used as a source. The work described here, though initial in scope, demonstrates that designers, analysts, and researchers concerned with urban morphology and transformation can benefit from the ways in which mixing algorithms operate to make information visible, prompting new insight capable of provoking action and transformation of found conditions.

The first question to arise from my initial attempt to define this toolset was whether the desirable characteristics of mixing algorithms could be identified. Are there certain kinds of mixing algorithms which can be applied successfully to multiple kinds of source material? What qualities characterize a good algorithm? First of all, a mixing algorithm in order to be successful should be simple to apply, that is, it should not involve a tactical move any more complicated than Quist's imposition of an arbitrary grid by means of tracing paper placed over a drawing. Second, it should be scalable; like Herbert's work with CAD software, it should capitalize on the inherent functions of the software without being limited by the material relationships it is attempting to represent. And third, a successful mixing algorithm should be capable of accepting multiple forms of input (for example, JPEG images and DWG files).

The second question concerned quality assessment. Are some source materials inherently more amenable to the use of mixing algorithms than others? Can the latent potential of source materials be identified prior to the application of algorithms? For example, do panoramic images have more potential than singular, small-scope images? Are high-contrast images more interesting than low-contrast ones? Does an image which contains a variety of textures contain more potential than a singular-textured image? Do digital models of free-standing buildings have more potential than models of joined buildings? How do we determine in advance whether it's worth the time to execute a mixing algorithm on given source material?

Finally, I question the role of interpretive tactics. As mixing algorithms are applied to source materials, and new materials result, is it necessary for researchers to develop new interpretive tactics, or do pre-existing techniques remain viable? Pre-existing techniques for interpretation include asking questions about observable physical characteristics of a zone or neighborhood or city. It isn't clear whether such questions are necessarily precluded through the use of a mixing algorithm, because mixed images and models share some of the characteristics of the source material (e. g., average color, in the case of images, or average building height, in the case of models). It is clear at this stage of the research that the act of comparing mixed material to original material is essential, for without comparison, there is a risk that the mixed artifact remains uninformative of anything beyond itself.
In future work, I hope to extend these tactics, first into the analysis of historic photographs, which as mentioned above constitute an immense resource – one which I believe to be amenable to the methodology described here. Second, into the analysis of digital models of urban form constructed by multiple designers, e. g., cities modeled in Google Earth. Like cities themselves, digital environments such as these register conflicting priorities about how the environment should be organized. These digital resources continue to expand, and it's imperative that our toolsets keep pace.

References.

Balfour A., Architecture education study, Consortium of East Coast Schools of Architecture and Andrew W. Mellon Foundation, [S.l.],1981.

Crandall D., Backstrom L., Huttenlocher D., Kleinberg J., Mapping the World's Photos, in "Proceedings of the 18th International World Wide Web Conference", Madrid, 2009.

Foster A., Ford N., Serendipity and information seeking: an empirical study, in "Journal of Documentation", v. 59, n. 3, 2003.

Halevy A., Norvig P., Pereira F., The unreasonable effectiveness of data, in "IEEE Intelligent Systems", v. 24, n. 2, 2009.

Hayles N., Mulder A., How does it feel to be posthuman? An email interview with N. Katherine Hayles, in The art of the accident, NAI Publishers, Rotterdam, 1998.

Herbert D., Models, scanners, pencil, and CAD: Iterations between manual and digital media, in "ACADIA'95", Association for Computer-Aided Design in Architecture, [S.l.], 1995.

Herbert D. Taking turns: Strained metaphors as generators of form in computer aided design, in "ACADIA '97: representation and design", Association for Computer-Aided Design in Architecture, [S.l.], 1997.

Kell D., Oliver S., Here is the evidence, now what is the hypothesis? The complementary roles of inductive and hypothesis-driven science in the post-genomic era, in "Bioessays", v. 26, n. 1, 2004.

Kolson K., Big Plans: The allure and folly of urban design, Johns Hopkins University Press, Baltimore, 2001.

Lynch K., What time is this place, MIT Press, Cambridge (USA), 1972.

McLachlan F., Coyne R., The accidental move: Accident and authority in design discourse, in "Design Studies", v. 22, 2001.
Rittel H., Webber M., Dilemmas in a general theory of planning, in "Policy Sciences", v. 4, 1973.

Roberts R., Serendipity: Accidental discoveries in science, Wiley, New York, 1989.

Rosenman M., Serendipity and scientific discovery, in "Journal of Creative Behavior", v. 22, 1988.

Schön D., Learning a language, learning to design, In Architecture education study, Consortium of East Coast Schools of Architecture and Andrew W. Mellon Foundation, [S.l.],1981.

Schön D., Designing as reflective conversation with the materials of a design situation, in "Knowledge-Based Systems", v. 5, n. 1, 1992.

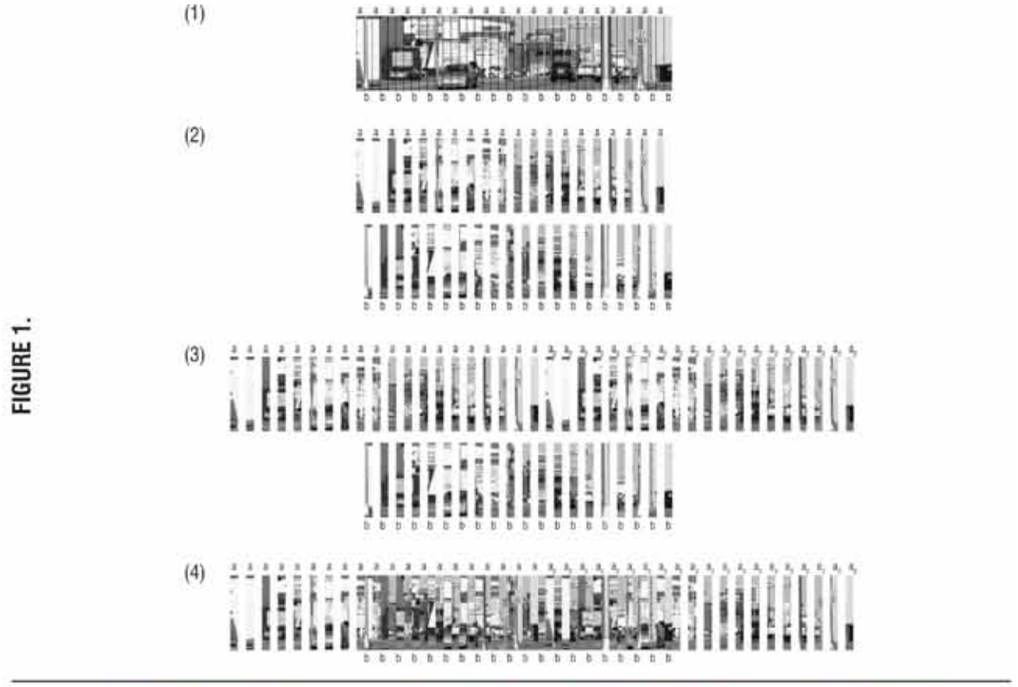


FIGURE 1.

FIGURE 2.

FIGURE 3.

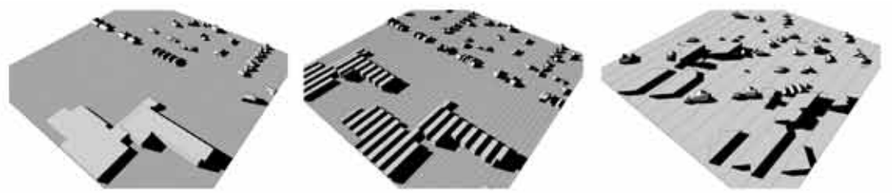


FIGURE 4.

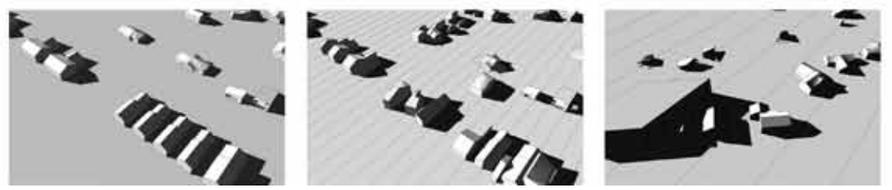


FIGURE 5.

John Comazzi - Jim Lutz
University of Minnesota, MN, USA

Retooling Architectural Pedagogy: Community-based Design in Haiti

The Situation
This paper will chronicle a unique disaster assistance/learning abroad program that emerged in the wake of the catastrophic 2010 earthquake in Haiti, and the pedagogical lessons that were gleaned from this extraordinary situation.

The program began in the early spring of 2010 with two "fact-finding" visits to Haiti by five faculty members from the School of Architecture at our University of Minnesota in collaboration with two international NGO's providing relief and reconstruction services in Haiti. Following the site visits to Haiti and subsequent strategic planning sessions, a group of faculty, administrators, and research fellows at the University of Minnesota combined the efforts of several emerging partnerships between the College of Design (CDes), the Center for Sustainable Building Research (CSBR), the American Refugee Committee (ARC), and Architecture for Humanity (AFH) into a coordinated, long-term plan to develop a curricular model focused on public interest design and disaster assistance.
Due to the structural and pedagogical changes recently implemented (2008) in our 3-year graduate (M.Arch) degree program, our spring term has been transformed from the traditional fifteen-week schedule into two seven-week, half terms that straddle a one-week "catalyst" course before spring break. This unique curricular structure was originally implemented in response to the disruptive innovations transforming the field of architecture, and a commitment on the part of our faculty to meet the demands of our students and future practitioners by creating a curriculum that upholds our responsibility to the discipline while maintaining our ability to respond to the rapid pace of change. As a consequence, our adaptable spring-term curriculum established a flexible platform to implement the type of coordinated efforts necessary for an integrated approach to public interest design and learning abroad in disaster response situations such as Haiti.

The Seminar: January – March 2011
Recognizing the extremely complex and challenging circumstances of working in a community recovering from a major disaster, we used the first half of the spring term (prior to the field work in Haiti) to pilot a seven-week, graduate-level seminar that was organized to build capacity among the group of students and faculty preparing for the program in Haiti. From the outset, there were several objectives and directives charged to the development of this new research seminar (led by John Comazzi, one of the authors of this paper). First, the seminar was intended to pilot a unique form of community engaged scholarship that would match the University's collective knowledge and areas of expertise with those of our partnering NGOs (ARC and AFH) in building long-term partnerships for future disaster relief, recovery and redevelopment efforts in Haiti and beyond. In addition to this long-term goal of nurturing professional partnerships, the course also connected with a range of local scholars and practitioners from a variety of disciplines in order to extend our collaborative networks while also increasing the direct impact that the research produced during the seminar would have on the field work in Haiti.

Given the short time frame of the seminar (seven weeks), the research and work produced by the students focused mainly on identifying, collecting, and organizing the most critical information and best practices necessary for the work to be produced in Haiti. The first three weeks of the seminar were spent contextualizing the larger historical, cultural, social, and natural systems in Haiti through the assembly of a group Research Manual and course website that became an online repository for the research and analysis created by the students: http://design4haiti.tumblr.com/.

Following the production of the Research Manual and website, the focus of the seminar shifted for the final four weeks to the production of a Field Guide that concentrated more directly on the critical information and data most important for supporting the human-centered, community-based design work by those students and faculty traveling to Haiti. To give structure to the research, the students were divided into five groups, each of which was responsible for producing one chapter of the 277-page Field Guide. Following the completion of the seven week seminar, the students in the course also participated in a one-week "catalyst" workshop exploring the role of social media in disaster relief (led by Renee Cheng, Head of the School of Architecture and Aaron Westre, Adjunct Faculty) and, therefore, a sixth chapter (Social Media) was added to this final Field Guide. Below is the final table of contents of the Field Guide:
1. Natural Systems: Design for a tropical climate
2. Infrastructure: Design guidelines for infrastructure in Haiti
3. Site: Design guidelines for urban and rural site configurations in Haiti
4. Building: Designs guidelines for a school in Haiti
5. Materials: Guidelines for materials and methods of construction for a school in Haiti
6. Social Media: Guidelines for harnessing social media in Haiti

On-Site Program: 3 Lessons From 7 Weeks In Haiti
The on-site portion of the program consisted of a seven-week studio and seminar. The studio (led by Jim Lutz, one of the authors of this paper) was operated out of space provided in the Rebuilding Center, the office run by Architecture for Humanity in Pétionville, a neighborhood in Port-au-Prince that was spared much of the damage from the quake. A range of projects was identified in advance by AFH with students working both individually and in teams depending on the complexity and schedule associated with each task. Students participated in the weekly update sessions, presenting their work for critique from the AFH Design Fellows, volunteers, guests, and visitors.
Two major projects were assigned to two teams comprised of three students each. The first was the development of a master plan for Santo, a new community for 500 families located near Léogâne, the epicenter of the quake. The second was LaConcorde, an orphanage school in the Carrefour area of Port-au Prince. Other work included the mapping of economic corridors, a model and O&M manual for a large composting toilet building planned for a school in Cite du Soleil, and classroom and sustainability "menus" used for fundraising purposes by AFH. Reviewers for the final presentation included Eric Cesal, AFH country director, Kate Stohr, co-founder of Architecture for Humanity, and Yves Francois, a Haitian-American architect.
The seminar component was led by AFH Design Fellows with Haitian and visiting professionals. Topics included local building techniques, sustainability issues, structural practices, the Haitian economy, and community engagement strategies. The presentations were accompanied by discussions, readings, and site visits.

All of the program participants lived in the communal residence operated by AFH and housed the Design Fellows, volunteers, and visitors.
By conceiving of this community-based, distance learning opportunity as a comprehensive program we, as faculty, were forced to rethink and rework the traditional models of design pedagogy and curriculum. Upon reflection, the experience has provided numerous lessons, architectural and otherwise, about the future of design education which places a greater emphasis on participatory, community engaged scholarship. Foremost among them are the following three lessons:

Lesson 1: The Inverse-square Law – The Closer You are to the Problem, the Better the Solution.

With several key partnerships in place (the American Refugee Committee, Architecture for Humanity, and SODADE, a Haitian Planning and Architecture firm), and the curricular flexibility afforded by our graduate program, we set out to establish an innovative program abroad in Haiti that would directly address the challenges that often complicate many well-intentioned programs working with communities recovering from natural disaster. Due to the structure of most traditional academic calendars, it is often logistically difficult to organize programs that allow for a sustained and direct engagement with communities beyond the occasional short visit or charrette among a select group of community representatives. With this physical distance often comes a host of other challenges that lead to misunderstandings, miscommunications, and misaligned expectations between the community members and the outside organizations attempting to lend assistance.
In order to confront this challenge directly, we began a partnership with Architecture for Humanity well in advance of the scheduled studio abroad portion of our program so as to create a working relationship with an organization that had established trust and confidence with numerous communities throughout Haiti. And because we have built a rather flexible curricular structure within our spring semesters of our graduate program, we were able to create an opportunity for the participating students and faculty to commit to a longer-term presence working on site in Haiti for seven weeks (March – May 2011). [Figure 02] With the opportunity to work and live with the staff and design fellows of Architecture for Humanity, and to engage directly with their partnering communities, our students were able to overcome the shortcomings of trying to design from a distance for communities about which they know very little, on sites that they cannot fully visualize or understand from afar.

Below we have excerpted entries from the student's blog postings that clearly articulate the unique opportunity afforded by this experience and the importance of being able to work directly with communities of need over an extended time frame:

We learned from our last meeting with Frantz (the Director) that a strong visual representation of our design was crucial in order for him to understand our design intentions... We made a quick cardboard massing model of our schematic design so we could clearly point out how the design proposal was laid out on the site... He moved it around, peering into the spaces and pointed out on the model suggestions that could be changed... It has made me realize that not everyone thinks and lives in a designer's mindset spatially. However, Frantz has taught me that it is our job as designers to provide the client with the necessary tools in order to completely understand our ultimate motives for the designed space... After our meeting with Frantz, he took the physical model and perspectives over to the children... and explained to the children the key points of the design, pointing out where the new housing and classrooms were going to be. (April 15: Katie)

Lesson 2: What's a "latrine"? – Traditional Architectural Education is Insufficient for Teaching Students to Work in Disaster Response Situations.

Because every disaster scenario entails a combination of challenges specific to the contingencies of that particular place, we found it necessary to rethink the means by which we teach and learn architecture when approaching this type of community engagement. As mentioned in the introduction, our unique curricular structure gave us the opportunity to plan and organize an integrated program consisting of several different learning experiences both home and abroad (research seminar, workshop on social media, studio and seminar abroad, and internships for students following the study abroad component) that together constitute a model for a distinct type of public interest design that we intend to replicate in the future. Furthermore, by partnering with several NGOs and private firms working within specific communities of need, we were able to rethink the traditional delivery of a design studio and research seminar in a manner that directly engaged students in a unique approach to community engaged scholarship and human-centered design. This instructional model places the partnering communities at the center of the academic program and gives students direct responsibility for the construction of their knowledge and the development of their own education.

Below are two student reflections elaborating on the importance of their participation in the development of their own education:

Today opened my eyes to the hardships of the nearby areas of Haiti that did not fare as well during the earthquake as Pétionville. I realized how sheltered we are from the worst of the destruction. The impact of seeing the true devastation of the January 12th earthquake first hand is a world apart from reading about it from my computer in Minneapolis. (April 07: Emerson)

I remember seeing fires in the trash as we drove, and I asked what was going on. Abby told me they were burning the trash to get rid of it, since there is simply just no place to put it. It was at that moment that the immensity of the situation in Haiti became real, and very overwhelming. I just kept thinking, where in the world does one even begin to think about changing these conditions? The problem is just so widespread. It is easier to focus on one project, such as the orphanage, and make an improvement in several Haitians lives than trying to tackle the greater picture. (April 07: Katie)

Lesson 3: It takes a Village to Make a Village – Working within a robust community-based design process

As mentioned in the introduction to this paper, a key contribution to the successes of this integrated program came from the broad network of partnering organizations and collaborators during the initial research seminar, as well as, the onsite work in Haiti. One of our main objectives for this program was to instill in the students the importance of creating a strong network of collaborators to ensure the effectiveness of the group efforts and to avoid the potential pitfalls of entering into a complex situation without a deep knowledge of the circumstances in which they will be working. The American Refugee Committee and Architecture for Humanity offered early support to host several faculty members from the School of Architecture on site in Haiti as part of our initial planning efforts. These trips helped to establish connections and relationships with these and other NGOs working in Haiti to ensure the viability of logistically managing and facilitating the program abroad. Additionally, we tapped the expertise of local scholars and practitioners to help sharpen the Research Manual and Field Guide produced in the preparatory seminar in advance of the program abroad.

These guest presenters helped to focus and direct much of the research and production in the seminar that was charged with the most immediate imperative to support the field work that would be undertaken by the six graduate students and faculty member (one of the authors of this paper) working in partnership with Architecture for Humanity. Below are two student reflections elaborating on the importance of their collaborative efforts with experts and community members as part of their distance learning experience:

On Monday Emerson and I were able to travel to Léogâne with a structural engineer, Rick, from Architecture for Humanity, who was meeting with a potential client for a new school in rural Léogâne... The school, which served grades K-6, experienced structural damage due to the earthquake. The building pretty much sunk a few feet on one side, leaving classrooms unsafe for the children to inhabit. The school is currently building a new structure, but unfortunately it is being built with the same unsafe construction techniques that were used prior to the earthquake. A new structure with classrooms for K-12, may be proposed... Along the way we stopped at several places and talked with the local people, who were eager to learn what we were doing in their community. (April 20: Katie)

After our formal presentations were complete, we were also asked to share our individual impressions on our experience working with Architecture for Humanity. Many of us expressed the notion that by working down here in Haiti we now fully recognize the real future of architecture—or really what architecture should be in the upcoming decades—designing for those who need it the most. We now fully recognize the importance and role that organizations such AFH have in arriving in disaster-stricken areas to successfully achieve programs for capacity building... Knowing you are making such a profound impact on someone's life makes this type of work so rewarding…and quite frankly, intoxicating. (May 08: Katie)

Summary and Conclusions
By fully embracing the charge of our new graduate curriculum, to "uphold our responsibility to the discipline of architecture while maintaining our ability to respond to the rapid pace of change," this semester-long program required a re-conceptualization of how we approach the education of future designers to intelligently respond the complexity of challenges they will undoubtedly confront. The traditional fifteen-week, studio-centric model of education was simply inadequate for the type of program being developed for our work in Haiti. Therefore, we found it necessary to rethink our curricular framework through the development of four new courses – two seminars, a studio, and a one-week "catalyst" workshop on social media in disaster relief – in order to deliver an innovative model of community-based design education.
The success of these efforts can be gauged in several ways: At

the end of the scheduled academic program, AFH was so impressed by the work produced by our students in Haiti that they invited all of the students to extend their involvement and covered the cost of their living expenses and rescheduled flights. Five of the six students stayed on as volunteers for an additional 2-3 weeks and continued to work on the projects they had managed throughout their academic program. Two remained in Haiti through the entire summer having accepted internship offers from SODADE, the Haitian planning firm working on a variety of redevelopment projects throughout Port-au-Prince. And for two students who returned home at the end of the program, their experiences in public interest design played a direct role in procuring summer internships with firms with projects in Haiti and other developing nations. Work continues to progress on all of the projects developed by or projects (the official groundbreaking for the Santo project took place on September 15th), and preliminary planning is underway to offer this integrated program in Haiti during the spring 2012 semester.

Five Take-aways on Which to Build – Pedagogical Lessons Learned:

1. There is a need to develop specialized programs in "humanitarian/public interest/disaster response design" in schools of architecture. These programs need to be inter-disciplinary including engineering, public health, economics, etc., and partnerships with NGOs, governmental agencies, with design schools taking an active leadership role in the development of sustainable communities.
2. There is a strong ethos of service in this generation of emerging professionals. Architecture schools need to recognize this or risk becoming irrelevant to a growing number of their students who desire outlets for their work beyond the realm of the academy and see community engagement as a critical part of their education.
3. Disaster response is, unfortunately, a niche in the profession that will experience steady "growth" in the coming years. The effects of climate change (drought, famine, population migration, etc.), increasing "natural" disasters, civil unrest precipitated by political/economic instability, etc., will require a growing numbers of specially-educated design professionals. Training the next generation of humanitarian designers needs to be a high priority.
4. Architects have a major role in capacity building. Architects need to be able to build intellectual capacity as well as buildings. Citizens in countries recovering from disaster need to be empowered to shape their own destiny. How you do this in countries (like Haiti) where generations have known nothing but political instability and corruption will require equipping designers with new skill sets.
5. The time is right. As the architecture profession re-defines itself in this time of imposed reflection, becoming a less elitist, more egalitarian discipline is essential (and long overdue).

Bibliography

Badanes, Steve; Bell, Bryan; Feldman, Roberta and Wakeford, Katie, Expanding Architecture: Design as Activism, Metropolis Books, 2008, excerpts.

Barnett, Michael and Weiss, Tom, eds. Humanitarianism in Question: Politics, Power, Ethics, Ithaca: Cornell University Press, 2008.

Beiser, Vince, "Organizing Armageddon: What We Learned From the Haiti Earthquake," Wired, May 2010. http://www.wired.com/magazine/2010/04/ff_haiti/ Bell, Bryan, Good Deeds, Good Design: Community Service Through Architecture, Princeton Architectural Press, 2003, excerpts.

Bellerive, Jean-Max and Clinton, Bill, "Finishing Haiti's Unfinished Work," NYTimes, July 11, 2010, http://www.nytimes.com/2010/07/12/opinion/12clinton-1.html?ref=haiti

Buchanan, Richard, "Wicked Problems in Design Thinking," in Brody, D. & Clarke, H. eds., Design Studies: A Reader, Berg: 2009, pp. 96-102.

Chiarella, Tom, "The Country That Never Was," Esquire, August 2010, http://www.esquire.com/features/impossible/bill-clinton-haiti-relief-0810

Collier, Paul "Haiti: From Natural Catastrophe to Economic Security," A Report for the Secretary-General of the United Nations, by Paul Collier, Department of Economics, Oxford University, January 2009.

Danticat, Edwidge, "Krik? Krak!", Vintage Press, 1996.

Darcy, James. "Locating Responsibility: The Sphere Humanitarian Charter and Its Rationale."

Disasters. Vol. 28 (2): pp. 112 -12, 2004.

Darcy, James and Charles-Antoine, H., "According to Need? Needs Assessment and Decision-Making in the Humanitarian Sector Humanitarian", Policy Group Report #15. London: OD, 2003.

Diamond, Jared, "One Island, Two Peoples, Two Histories: The Dominican Republic and Haiti," in Collapse: How Societies Choose to Fail or Succeed, Penguin, 2005, chapter 11.

Desroches, R.; Ergun, Ozlem and Swann, Julie, "Haiti's Eternal Weight," NYTimes, July 7, 2010, http://www.nytimes.com/2010/07/08/opinion/08desroches.html?_r=1&ref=haiti

Farmer, Paul, Pathologies of Power: Health, Human Rights, and the New War on the Poor, UCLA Press, 2003.

Farmer, Paul, The Uses of Haiti, Common Courage Press, 2005.

Fassin, D., "Humanitarianism: a Nongovernmental Government," in Michael Feher, ed., Nongovernmental Politics. NY: Zone Books, 2007.

Haskell, T., "Capitalism and the Origins of the Humanitarian Sensibility, Part 1," American Historical Review, 90, April 1985, pp. 339-61

James, Eric, Managing Humanitarian Relief: An Operational Guide for NGOs. Rugby: Practical Action, 2008.

Keen, D., Complex Emergencies. Polity Press, 2008.

Kidder, Tracy, Mountains Beyond Mountains: The Quest of Dr. Paul Farmer, A Man Who Would Cure the World, New York: Random House, 2004.

Lepik, Andres, Small Scale, Big Change: New Architectures of Social Engagement, MoMA, 2010, excerpts.

Luhnow, David, "Global Aid Is No Relief for Small Haitian Businesses," The Wall Street Journal, March 03, 2010. http://online.wsj.com/article/SB10001424052748704486504575097783544905868.html

Martone, G., "Relentless Humanitarianism," Global Governance. #8, April, 1998. pp. 149-154.

McClelland, Mac "Aftershocks: Welcome to Haiti's Reconstruction Hell," Mother Jones, Jan/Feb 2011 Issue, http://motherjones.com/politics/2011/01/haiti-rape-earthquake-mac-mcclelland

Nussbaum, Bruce, "Is Humanitarian Design the New Imperialism?" Fast Company Design Blog Post, July 07, 2010, http://www.fastcodesign.com/1661859/is-humanitarian-design-the-new-imperialism

Polak, Paul, Out of Poverty: What Works When Traditional Approaches Fail, Berrett-Koehler Publishers, 2009, excerpts.

Rieff, D., "Humanitarianism in Crisis." Foreign Affairs, Nov/Dec 2002, Vol. 81. Issue 6, p. 111

Robinson, Randall, An Unbroken Agony: Haiti From Revolution to the Kidnapping of a President, New York: Basic Civitas Books, 2007.

Schwartz, Timothy, Travesty in Haiti, Book Surge Publishing, 2008.

Smith, Cynthia, Design for the Other 90%, Editions Assouline, 2007, excerpts.

Sontag, Deborah, "In Haiti, the Displaced Are Left Clinging to the Edge," NYTimes, July 10, 2010, http://www.nytimes.com/2010/07/11/world/americas/11haiti.html?ref=haiti

Sinclair, Cameron and Stohr, Katie, eds., Design Like You Give a Damn: Architectural Responses to Humanitarian Crises, Metropolis Books, 2006, excerpts.

Sinclair, Cameron, Architecture for Humanity, in response to Nussbaum, "Admiral Ackbar, It's a trap! - How over-simplification creates a distorted vision of Humanitarian Design," posted July 8, 2010. http://www.cameronsinclair.com/index.php?q=node/74

Steffen, Alex, World Changing: A User's Guide for the 21st Century, Abrams, 2006, excerpts.

Vaux, T., The Selfish Altruist, London: Earthscan, 2001. pp. 1-17.

Walker, Peter and Maxwell, D., Shaping the Humanitarian World. Series on Global Institutions. London, Routledge, 2009. Introduction, pp. 1-12.

Online Resources

Haiti Rewired: http://haitirewired.wired.com/

Report of The United Nations in Haiti 2010 Situation http://www.un.org/en/peacekeeping/missions/minustah/documents/un_report_haiti_2010_en.pdf

MINUSTAH: United Nations Mission for the Stabilization of Haiti, 6-Month Report. http://www.un.org/en/peacekeeping/missions/minustah/documents/6_months_after_commemoration.pdf

Action Plan for National Recovery and Development of Haiti, March 2010. http://www.cirh.ht/resources/Haiti_Action_Plan.pdf

Haiti Post Disaster Needs Assessment, March 2010. http://www.cirh.ht/resources/PDNA.pdf

SPHERE Project: Humanitarian Charter and Minimum Standards in Disaster Response. http://www.sphereproject.org/

Private Sector Economic Recovery Plan for Haiti, March 23, 2010. http://www.cirh.ht/resources/Private_Sector_Plan.pdf

Interim Haiti Recovery Commission Website. http://www.cirh.ht/

Inter-Agency Standing Committee for the Haitii Shelter Cluster. www.shelterhaiti.org

Kings College. Humanitarian Futures Project: http://www.humanitarianfutures.org/main/hfpubs/futures

USAID – Haiti Website. http://www.usaid.gov/haiti/

OneResponse, Interagency Haiti Coordination Website.http://haiti.humanitarianresponse.info/Default.aspx?tabid=61&language=fr-FR

IASC (Inter-Agency Standing Committee) Shelter Cluster: https://sites.google.com/site/shelterhaiti2010/

USGS Earthquake Hazards Program. http://earthquake.usgs.gov/

Earthquake Engineering Research Institute (EERI) Report #1 - April 2010. http://haiti.ce.nd.edu/PDF/EERI_Haiti_Rpt_1.pdf

EERI Special Earthquake Report #2 - May 2010. http://haiti.ce.nd.edu/PDF/EERI_Haiti_Rpt_2.pdf

USGS/EERI Advance Reconnaissance Team, REPORT V. 1.1, February 23, 2010. http://haiti.ce.nd.edu/PDF/USGS_EERI_HAITI_V1.1.pdf

Pacific Earthquake Engineering Research Center (PEER), Preliminary Reconnaissance Report - Haiti http://haiti.ce.nd.edu/PDF/PEER_Preliminary_Reconnaissance_Report.pdf

Ushahidi Crisis Map of Haiti. http://haiti.ushahidi.com/

IDEO Human Centered Design Toolkit. http://www.ideo.com/work/item/human-centered-design-toolkit/

NYTimes Responder Updates on Haiti's Earthquake: http://thelede.blogs.nytimes.com/2010/01/12/gleaning-information-from-haiti-online/

"Observations on Ongoing Efforts to Address the Haitian Housing Crisis," By Craig Cole, S.E., 02/13/10. http://haiti.ce.nd.edu/PDF/HaitiHousingIssuessomeobservations.pdf

Kleiwerks International: Haiti projects and resource page. http://www.kleiwerks.org/tag/haiti/

University of Notre Dame, Committed to Haiti Program, Resource Web. http://haiti.ce.nd.edu/

Alessandra Como
Università degli studi di Salerno, Italy

Ma.Chi.Na.

Our epoch is one in which space takes for us the form of relations among sites.
Michel Foucault

Ma.Chi.Na. was a design interactive laboratory of urban spaces in the cities of **Ma**nchester, **Chi**cago and **Na**poli organized between the University of Salerno, Manchester School of Architecture and the Washington State University. Students from England, United States and Italy worked in connection creating a network of interpretation of urban sites - video, texts, and images - which migrating from one site to another, from a group of students to another, constituted the basis for the design work, following a process which was set at the beginning within the syllabus of the course, developed on the footstep of theoretical readings and investigations.

This paper narrates the didactic experience with the goal of starting from here discussions and incite methodological reflections with other schools and teaching experience. The actual description of the design laboratory will occur along with observations upon the reasons which inspired the design laboratory and on the theoretical references behind the work. The relationship between the ideas – theories, hints, research topics, methodologies - and the way of translating those into instrumental means to be presented to the students to stimulate the design process is basically what triggered the paper itself.

At the base there's a belief in a close relationship between the research, the theoretical reflections, and the teaching within the design studio. This doesn't imply the need to structure the studio with an abstract work, nor at least at the first years of study. Learning to design – if we can say so of this never ending process - occurs through the making. Along these lines, the didactic experience was a laboratory of the making with a strong use of physical models, as well as of visual means: images and videos. On the other side what was requested to the students within the course program was conceptually conceived and stemmed from speculative considerations. The syllabus was in fact designed, deeply studied and structured in successive steps, each distinct while all connected by the central thread of the course. In this sense the laboratory responds to that tradition of the Anglo-American design studio, different from the European – above all Italian - tradition of more open and less structured programs, characterized by a strong theoretical base though not following a real design process. It is also along these lines that this paper wants to become the opportunity for a common discussion.

The design laboratory work led, through the various steps, to look, interpret and re-design the contemporary city. This is, actually, the real goal of the experiment. The laboratory was in fact an urban laboratory, addressed to develop design projects, which had to be both architectural and urban with eventually the goal of operating a reflection on the sense of the contemporary city.

The process

The laboratory title – Ma.Chi.Na. - highlights the symbiotic work between spaces in the 3 cities of Manchester, Chicago and Naples. Here a series of key areas were identified: some voids within the ancient centre of Naples with some ruins, an area in Manchester with Roman archaeological remains, and an area in Chicago with an historic building next to an infrastructural junction. All the areas were therefore characterized, besides the differences, by historical fragments and urban voids with the need of a new definition and contemporary transformation.

Students were asked to interpret the urban sites with a perceptual approach through images, both made on the spot and searched on the web, and mainly through a video and a writing, which had to be personal and poetic, rather than simply descriptive. All the 3 universities – Italian, English and American - were involved in this first phase of reading and interpreting the selected areas of the 3 cities. The final product of the first phase was a collection of images: a combination of pictures and videos realized by the students, together with audio recordings and meaningful texts, all creatively interpreting the sites through selected topics highlighting qualities and specific identities.
The image collection became a common material – as a database - from which to draw on during the second phase of the work, which involved only the Italian and English universities, working together during a workshop of a week. Here the students had to extract images and construct what it was called the "heterotopian section" after the heterotopia definition introduced by the French philosopher Michel Foucault and which was identified as the main reference to the work. The "heterotopian section" was a section/path crossing through a selected assigned area, realized through a collage of images from the site and also from the other sites of the 3 cities. The representation had to bring back the inner qualities of the specific site though it was derived also from the other sites. The images were chosen through associations, looking at transparencies, shadows, densities, permeablities and impermeablities, presence of voids, relationship with the sky, sequence of materials, relationship with the ground.

The third and last phase – more specifically the design phase - aimed at producing architectural and urban solutions for the selected sites to design a multimedia and installations centre which had to be conceived thinking beyond the physical boundaries of the urban block, toward the city spaces – streets, squares, facades. The design had to start with a section developed from the "heterotopian section", and which initially had to be constructed besides a general understanding of the whole design project, simply as an autonomous representation, in order to define the spatial condition, the space sequence, and the relation among the parts. Only after the completion of the section, one would study the design project as a whole through the main plan identifying the urban relations and through a physical model. It is only now, therefore, that the initial intuition of the architectural topic – developed starting from a perceptual approach - enters into relation with considerations of the urban condition: needs, proximities, relationship with the existing fabric and the urban networks and so on, that is with all that attains to the sphere of a structured reading and analysis of the city spaces.

The whole process was therefore conceived as a sequence of steps, autonomous though connected through a thread – a line of thought - designed to induce the creative process of design, addressing toward a course of action which was sensorial rather than intellectual, based on images and associations through poetic and experimental work and stemming from observations and interpretation of the contemporary city.

The collection of images. Perception and cross-information of urban sites

The first step was the observation of the city with a perceptual interpretation of sites, intended as personally developed. The images, videos, sound recordings, and texts were produced through a direct experience of the sites and also in distance, using the internet, in particular using excerpts from films. The site perception varied according with distance and type of observation which was either real of a known reality – that one of their own city, as for the English students from Manchester -, or coming from the travel experience – as for the American students from the West travelling to Chicago – or still real, of a close reality though not so well know, as for the Salerno students in Napoli – or they were distant and virtual realities as for the same Salerno students for the cities of Manchester and Chicago, using the web through google earth, street views or with any other images that they could find.

The sites from the 3 cities were described personally, rather than represented in images far from oneself or through the ambition of an objective description. Images were as perceptual snapshots and the whole of those images gave back and narrate the sites. *Until the End of the World* (1991) by Wim Wenders with a specific use and meaning of images was a reference to the work. Here the leading character travelled through cities and territories of the world in order to collect images to be transferred to his sightless mother through a mechanic device which connected with his mind, his personal way of observing, that is to his memory. Looking through somebody else eyes was in fact at the base of the process. That large number of images, moments captured by the students – streets angles, buildings, portions of skies - becomes the *collection of images*, a set where the single snaps mix together, starting to live their own existence besides their sites of origin. The whole of images, the collection, which, on purpose, was mixing texts and images from different sites, acquired the sense of a plural and fragmented interpretation, offering multiple possibilities of creating relationships among sites and cities.

The process transformed the complexity of the 3 cities in a limited, though still large, number of images, that is that it transformed the reality in a sequence which doesn't simplify, doesn't catalogue in rules, or in morphological and typological systems, rather gives back images, personal perceptions linked to spatial solutions – relationship between volumes and voids, relation with the ground and the sky. Taking with oneself the substance of sites, with that attempt of physically feeling things – in this case through the selection of the sight – is what Italo Calvino[1] tells as the true sense of the act of collecting, that is transforming the continuous flux in a series of objects saved from dispersion.

Heterotopia. Interpreting sites through the relations and association with other sites

The images, exchanged among the students and mixing sites and cities, became a common material to employ to realize the so called "heterotopian section", juxtaposing in section images from various sites, a drawing which was experimenting the ideas by Michel Foucault expressed in his seminal lecture "On Spaces Other" ("Des Espace Autres") held at the architectural society of Tunis in 1967 – a lecture which had a great echo within the theoretical and critical debate on urban studies. In the speech Foucault introduced the concept of *heterotopia*, defined in the so called third principle of the text, as a space capable of juxtaposing in a single real place several spaces initially considered incompatible. As he explains, while utopian places are non existing spaces, heteropias are material and immaterial at the same time, being related to a specific and real place and engaging relationships with other real and mental sites as well. Along these lines, space is not restricted anymore to the traditional Cartesian view and acquires a multi-layered meaning, involving multiple imaginations, associations, and experience.

Generally the concept of heterotopia has been used by architects and urban critics to identify spaces other, ambiguous and on the borderline, with specific spatial characteristics[2]. The term has been understood in many various ways, sometimes with contradictions. The interpretation here presented aims mainly at stressing the role of heterotopia in the relation with other sites - real and imaginary; considering therefore the conceptual meaning more than a physical and spatial character. In this sense the French philosopher ideas would be extended into a broader area. Heterotopia could become a way to observe and read reality, even beyond the specific sites the same Foucault refers to, such as gardens, theatre and so on. The concept of heterotopia allows to introduce a level of the imaginary within the interpretation of reality and to develop the study of urban sites with an approach which introduces levels of complexity and personal interpretation.

The process, though based upon contemporary means with an extensive use of images and videos, replicated an ancient mechanism in architecture, that is the one of the association. This is what Peter Zumthor said in his lecture "A way of Looking at Things": <When I think about architecture, images come into my mind. Many of these images are connected with my training and work as an architect. …Some of the other images have to do with my childhood. …When I design a building, I frequently find myself sinking into old, half forgotten memories…>[3]. Similarly, the didactic experiment wanted to induce the formation of one's own memory creating collectively a gathering of images ready to be used in the mechanism of association for the design project. This approach aimed at experiencing that a design project is strongly connected not only to the specific site but also to other sites – real and imaginary - through the personal and poetic process of association, which is at the base of the creativity of the design project.

Generative Machines. The "heterotopian section", diagrams and other architecture writings.

The "heterotopian section" constituted a drawing capable of generating, having a value of projecting; starting from this drawing the design project develops, initially in section and then overall. The "heterotopian section" is like a metadesign or a conceptual design, a drawing containing what it will be later developed. It has an abstractness though, meantime, being constituted of real images, is connected to reality. It is an operational and starter device that can trigger transformations, ideas, design projects.
Reference has been the concept of the diagram explained and experimented by Peter Eisenman: <A diagram in architecture can also be seen as a double system that operates as a writing both from the anteriority and the interiority of architecture as well as from the requirements of a specific project. The diagram acts like a surface that receives inscriptions from the memory of that which does not yet exist – that is, of the potential architectural object>[4]. Currently, there is a strong use of diagrams within the design process. Example are the works of architects such as Eduardo Arroyo or Federico Soriano and the research unites many contemporary architects besides their differences. The interest for the diagram[5], seen not as a geometric scheme or a mere descriptive representation, but as drawing-thought – an architecture writing - stems from the necessity of telling and writing of the design project visually. The diagram develops from the consideration of the inadequacy of the traditional systems of representation to describe the aspects which are more specifically compositional, conceptual and theoretical. In this sense, diagrams show the sense and the fundamental ideas of a design project, defining a sort of dna, beyond the architectural language which will later be used.

Differently from some of the quoted experience, the "heterotopian section" doesn't answer to those characters of essentiality, minimum sign, within the absence of aesthetic expression and gesture. The "heterotopian section" could be set between the diagram and the architectural sketch, which differently to the diagrams is all gesture and expression of the architect personality. Obtained through intuitive operations of collage and montage of perceptive snapshots, urban conditions, moments fixed in a precise time, in a found light condition, they are highly expressive and personal, building a spatial condition at the same time. The "heterotopian section" becomes a support for the idea and at the same time identifies the spatial solution, becoming synthesis also of the design expression. Rather than an analytical-cognitive instrument, the "heterotopian section" enters within the creative design process, becoming a generative device.

The use of a generative mechanism evokes also other experimentations. In *Life: A User's Manual* by Georges Perec the inhabitants of a Parisian building are all connected to each other through their stories, a system of plots, which offers infinite developments within a grid of a combinatorial system of rules creating continuously unfolding situations and narratives. Similarly to the Perec structure which generates stories, the didactic experiment generates designs and it could in theory repeated several times, becoming a machine for design projects and it is from here that the other meaning – that creative machinism of the mechanism - of the title "Ma.Chi.Na." stems.

Re-interpreting the contemporary city.

The project was based on the aim of interpreting and re-designing a site starting from the relationship with other sites through a work of associations and personal perceptions. This seems particularly prominent for the contemporary world: <Our epoch is one in which space takes for us the form of relations among sites>[6], as Foucault affirmed. Considering the current difficulty of "recognizing" the contemporary city and comprehend the phenomena of transformation questioning the meaning of sites

Alessandra Como
Università degli studi di Salerno, Italy

between local identity and globalization, the project aimed at creatively interpreting the open and fragmented system of urban spaces and utilize the culture of information to look for new interpretative forms, rather than finding an analytical answer. In the years of communication at many levels and of mobility, the project aimed therefore to use the concept of relationship as a base for creative experimentation to re-found and re-interpret the sites through other sites. Observing the reality from the point of view of the relationship encourages to look at the city beyond the dichotomy of global / local, real / virtual, identity and lack of identity, public / private space, near / far and so on in order to look for interpretations with multiple and stratified meanings which help to recognize the urban spaces yet within the fragmentation and help to consider the city as an open and multiplied system, made of parts that can communicate with other sites and cultures only seemingly far.

The process is based on a work of images, upon a material which migrates among people and sites, interacting with the various physical and mental contexts. The result was a many-handed work, an arranging and de-arranging sights and perceptions and what was grasped and produced for a city resulted also from the material from the other cities, thanks to the relational work.

The design is tested as a collective action rather than an individual action, given that each solution contains the ideas from another student and from another city. This reflects a universal condition: each design is the result of individual choices but is also a collective design, a design of the culture and history of which it is a part. It is again Foucault who well expresses the essentially relational nature of the space where we live: <…we do not live in a homogeneous and empty space …we do not live in a kind of void, inside of which we could place individuals and things. We do not live inside a void that could be coloured with diverse shades of light, we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not superimposable on one another>[7].

Associating sites apparently distant and different produced unexpected consequences. Cities looked eventually incredibly close. The subway metropolitan passages of Chicago became not too far from the underpasses of the ancient centre of Naples. The change in height of the American city differed only for the scale from the contrasts of volumes of the same city of Naples.

The film directed by Maria Totaro using materials of the students – videos, images and texts - registered the experience. Here the shooting in a certain city is edited together with the one from another city without any cuts. The film constructs a unified urban space where identities mix up without being cancelled, yet being reinforced within the perceived moments. In the film *The American Friend* by Wenders (1977) 3 cities overlap – Hamburg, Paris and New York - and the story develops in a sophisticated way as it was one city, a “simoultaneous city”[8] capable of interpreting stories and different characters, the urban strangeness as well as the belonging.

[1] I. Calvino, Collezione di sabbia, Milano 1994.
[2] H. Heynen, “Heterotopia unfolded?”, in M. Dehaene and L. De Cauter (eds.), Heterotopia and the City: Public Space in a Postcivil Society, Routledge 2008.
[3] P. Zumthor, Thinking Architecture, Lars Muller Publisher, Baden 1998.
[4] P. Eisenman, Diagram Diaries, New York 1999.
[5] G. Corbellini, “Diagramma” in Ex Libris. 16 parole chiave dell’architettura contemporanea, Milano 2007.
[6] M. Foucault, *Of Other Spaces*, in <Diacritics> 16 Spring 1986.
[7] M. Foucault, *Of Other Spaces*.
[8] *The feeling of the place on the map of Virgin Islands*, an interview to Wim Wenders by S. Casciani, in <Domusweb> 29 January 2011.

James Eckler
Marywood University, PA, US
Karl Wallick
University of Wisconsin, Milwaukee

Imperatives of Craft: Making in Beginning Design as it Prefigures Urban Response

"Precision is not a synonym for rigidity; instead it is the instrument necessary for exploring and establishing the limits of ambiguity in a project. Only a remarkably precise expression can become a plane of reference for varying meanings, raise varying interpretations, and therefore create a different collective meaning for the architectural work." (Gregotti, 1996)

Instrumentality and Space

Expectations of craft, both digital and manual, situate drawing as the primary agent of synthetic investigation for architecture. However, with constantly evolving software, scripting, databases, and various other analytical programs added to the architect's media of brain and pencil, both students and curricula face choices about how to position design and skills curricula between broad exposure to many tools or narrow specialization in the media of the moment[1]. Attempting to locate a school's position along such a gradient means that one is forever playing catch-up to the latest software updates. But in comparison to technology, fundamental design principles mostly remain constant. The pedagogical outline must be robust in principle but malleable in structure so that digital and manual tools can evolve with the industry while architectural principles stay intact. In this paper we show such an approach within the context of an undergraduate foundation studio. Our approach to digital processes as generative tools involved defining spatial qualities through the lens of edge, zone, and assembly tectonics in a carefully sequenced series of cumulative design exercises. In addition to comparing the types of knowledge and skills generated through this method, we must ask: how does this knowledge compare to the tectonic questions pursued in practice? Furthermore, are our expectations for architecture too limited with such a narrow focus on the lineaments of organization and drawing? Do tectonic sensibilities provide sufficient linkage between the different steps in the studio sequence? The studio examples will show that as a pedagogical tool, keeping spatial fundamentals stable, we are better able to keep up with the dynamic pace of technological evolution.

Making and Systemic Response

The priorities of architectural practice increasingly favor self-referential buildings conceived without consideration to the cities that surround them[2]. This demands a culture change within the architectural profession – a culture change that must be precipitated at the earliest stages of design education. For these beginning design students, pedagogy can foster an ethic that prioritizes analysis of, and response to, contextual forces as a part of the design process so that architecture is understood as a component of a city – a part of a complex set of interdependent systems[3].
For this pedagogy to work it must reduce complex urban problems down to scenarios that a beginning design student can manage. To that end cities are understood as spatial, tectonic landscapes wherein relationships are entirely compositiona[4]. While not addressing the city outright, this serves to prepare the student for future, more sophisticated, design problems involving the multifaceted contextual forces of the contemporary city (Figure 1).

***Figure 1**. The beginning design student is able to understand context as a set of interrelated systems through the application of crafting techniques toward analysis. This ultimately prepares the student to see the city as a similar set of interrelated systems to which the architectural intervention should respond.*

In this model, craft is explored in two ways: as a method for analyzing a context, and as a way of iterating architectural responses to that context. Both digital and manual crafting techniques are utilized so that the student is able to employ a wide array of tools throughout the process of reading and intervening within a context. This enables the student to choose the right tool for any task depending upon its particular attributes. It also enables the student to exploit the possibilities of digital design without losing sight of the integrated nature of architecture and context (Figure 2).

***Figure 2**. To the beginning design student architectural response is understood to be the generation of form and space based upon compositional logics derived from the analysis of context.*

Tectonic Foundations of Space

Content in this studio was predicated on craft of form and material (or non-material), along with several assertions.
• Form acts in service to space.
• Assembly is the primary means by which the architect is able to configure and compose space.
• Character of space, created through assembly, is the means by which experience informs architecture.
The reason why we are interested in form is not only for its ability to shape space, but also its responsiveness to external conditions. Our definition of form is not that of fantastical objects generated purely from the imagination. It is not that of grand schemes invented by the intellectual machinations of self-proclaimed masters. Instead it is a medium shaped by the understanding of forces acting upon it.
Form that utilizes external forces in its shaping is the type that anticipates architectural circumstances of structure, site, culture, and program[5]. It controls and defines the perception of space. Such form can be manipulated, modified, and reformed to circumstance. Form that is dependent on an internal definition may be less malleable and potentially less accepting of other content[6]. This is not to say that the idea of an individual architect is not without merit, but that it comprises only a little of the compositional equation.
In the building arts, tectonics refers to principles of making that are rooted in a consideration of materiality, craft, and joinery [7]. In other words, that working with design ideas rooted in the tectonic elements pre-supposes the act of construction at any scale of building. Historically, this tradition is rooted in the theories of Semper and Bötticher, most recently and clearly elaborated on by Kenneth Frampton[8]. Whereas for Bötticher, tectonics referred to a system binding forms into a single construction, Semper anticipates the disassociation of enclosure and structure by envisioning the mythical primitive hut (Semper, 1989).
For Semper, the tectonic elements compose a four-part taxonomy: mass/base, frame/structure, enclosure/plane, and hearth/programmatic center. Frampton merges both sensibilities (which are really not all that different) by referring to stereotomic (of the earth, heavy) and tectonic (carpentry – frame, light).
Critical to any interpretation of this historical and still relevant view of constructing space is that a designer has an attitude towards joinery. Heavy or light, maybe is never so important as the connection between the two different systems.
Why would we want to instruct students in the skillful manipulation of the tectonic elements? Well, what else would you make spaces out of than masses, planes, and frames?

Process versus Visualization

The studio concerns itself with the development of compositional skills and the manipulation of space. The investigation is primarily formal, not because we value form as a means unto itself but because it is the foundation of spatial cognition. What is space? Is it just any old room? Is it an empty volume, or a big void for our stuff? This seems insufficient. When we remember great spaces, we remember qualities that anticipate specific types of inhabitation. This may be because of a certain height or proportion, a specific character of light, or because of another space we can see from the space we occupy. For this studio, space is the intentional result of form-making that can anticipate future activities and occupations – place making. What is space? Space is nothing without an attitude towards the varied characteristics of inhabitation and how one juxtaposes those different sensibilities. Engineers can calculate structural loads and thermal performance. Contractors can construct rooms and buildings. Planners can deploy roads and introduce principles of zoning and policy. But who speaks for space? The task of organizing, prioritizing, and emphasizing spatial conditions in support of human activity is the architect's mastery.
It is impossible to design architecture without space and form. The two elements are interdependent, neither primary nor secondary to each other but completely reciprocal. By thinking of these two concepts in near perfect alignment, we gird ourselves for thinking about the role of architecture as one in mutual dialogue with other forces. To this end, the studio is structured to guide students in a manner so that the accommodation of programmatic, circulatory, and other forces is embedded within the work. This might be different from an idea of the architect as a mastermind who is able to articulate a single genius vision with a stroke of the pen. Architecture may be figurative or an object, but to be successful, it must respond to multiple other criteria. It extends across sites, histories, and cultures not as singularities, but as vast interrelated systems that have individual characteristics articulated within the whole.
The job of spatial organization is not one of personal expression, but of capturing and channeling the manifold requirements of site, program, and construction into a legible volumetric composition. Despite this, there is a tremendous amount of room for variety within this structured agenda. Students are invited to consider the variety inherent in manipulating spatial depth, spatial joints (thresholds) between context and intervention or within various programs, spatial overlap, nuances of ordering, programmatic hierarchies, qualities of enclosure, volumetric transparency, etc. The instructional themes taught in this studio are not promoted because they are some sort of 'best practice'; they are not. However, they are a core part of the architectural discipline and an important foundation upon which other design curricula depend. Indeed, even if the students choose to challenge these methods in their future careers, it is useful to have a point to resist and to be able to resist intelligently requires sincere study.

Studio Process: Analyses, Generators, Syntheses

A priority for this studio is to overcome students' expectations that digital craft represents a final outcome. For this group of undergraduates, manipulation occurs exclusively within the virtual environment and any output is considered immutable. This presents a clear barrier to integrating inquiry as public discourse, iterative design process, and digital craft into the design process. Additionally, this is the student's first exposure to digital media in design, much less digital fabrication. This reality presents a pedagogical problem. How do we structure a project that offers necessary skills based training, coupled with design instruction with an emphasis on integrating manual and digital methodologies? Can this structure be used to reinforce and develop a process of design in which discovery is a result of craft? How can there be tectonic language or even an attitude towards assembly when one is plotting models? How do we formulate a studio structure to deliver content that anticipates construction logics for materials, structure, environment, and organization rather than formal gymnastics divorced from actual limitations? And, within the larger architecture curriculum, how does this project help prepare students to enter an ever changing, technologically diverse, discipline?

The studio has five explicit exercises that, while occurring in a linear sequence, actually encourage development of non-linear thinking through the design process. That is to say that with each sequential iteration new discoveries are made that have an impact on both previous and subsequent versions of a project. The same exercise is repeated several times in slightly different contexts with various subtle changes in scale and orientation. The work is distinct but cumulative[9].

The studio begins with precedent analysis exercises that introduce an architectural vocabulary of oral and graphic tools for defining space. The task here is to identify the role and effects of various space defining components. The students' thought process and drawings are successive through three different stages of architectural thinking: documentation, analysis, and generative design synthesis. This is another way of describing the gradual accumulation of an architectural position (opinion informed by observation and analysis). Structuring the analysis are three drawings: spatial profiling, spatial promenade, and tectonic components. While initially each drawing stands on its own with regard to analytical content, they are ultimately used cumulatively (Figure 3).

***Figure 3**. Students document precedent buildings in layers. This form of analysis enables them to study aspects of the buildings independently of other forces. Much is learned in the later synthesis when the layers are combined and interrelationships between compositional systems are made obvious. This image shows the cumulative information in the overlaid drawings.*

This layered, spatial diagram[10] was translated into a model in which students investigated various possibilities for joint making and spatial configuration. The diagrams provided a set of criteria for the construction. The models were generative constructs; they interpreted information from the diagram, and used it as a catalyst for the invention of something entirely new.

As the students move into the next phase of the studio, they are given a contextual field. This field was a simple arrangement of masses and voids intended to serve as a simplified environment to receive their design. Students used this field as a framework to develop a "digital fragment". It employed tectonic joinery and spatial inflections generated from their contextual field in a digital model leading to fabrication of laser-cut and powder printed model components (Figure 4). This exercise had two objectives: to introduce digital crafting skills and techniques, as well as to apply those techniques in the fabrication of a spatial construct within a set of design criteria. It was not programmed, but was generated based on compositional and organizational logics. And, it constituted a point of departure for the design process.

***Figure 4**. New crafting techniques that span both manual and digital craft provide the students with new skills in representing and articulating spatial information.*

Students were also assigned an organizational pattern to govern the placement and modification of their project. The class was divided between: peripheral, linear, radial, centralized, and clustered patterns[11] (Figure 5). Within each assigned pattern the students used the grid as a system in which registration lines could be used to regulate composition and render spatial relationships. These organizational logics determined a set of parameters for the next phase of the project in which students were to craft spatial extensions to knit the digital fragment into its surroundings. Students used contextual characteristics of the field to determine placement, orientation, and relationships between elements of the composition (Figure 6). While digital files were being fabricated, the contextual field was developed as a physical carriage or base that would eventually hold the digital fragment[12].

***Figure 5**. Organizational patterns are diagrammed and used as a guide for composition. In order from left to right, students diagram Centralized, Peripheral, and Clustered organizational patterns.*

***Figure 6.** Techniques for making extend into the representation of systems of relation between context and intervention. Spatial constructs are manipulated in response to contextual forces identified in the organizational diagram. Contexts are modified in response to the new conditions presented by the intervention of the new spatial construct.*

Finally, a third set of spatial profile and tectonic orthographic drawings were constructed digitally and augmented manually (Figure 7). These were working drawings meant to revisit the tectonic character and diagrammatic spatial structure.

***Figure 7**. New drawings are constructed to diagram the resultant spatial construct and evaluate its relationship to contextual conditions that hold it.*

The fragmentation of the studio methodology into discrete exercises is both pedagogical and philosophical. Besides breaking the design of buildings into manageable chunks, the fragment is meant to reinforce that architecture should have relevance far beyond the primacy of a single object. In other words, that architecture extends across sites, histories, and cultures not as singularities but as vast interrelated systems that have individual

James Eckler
Marywood University, PA, US
Karl Wallick
University of Wisconsin, Milwaukee

characteristics articulated within the whole. The deliberate progression of gradual development outlined above supports the premise that architecture is about the primacy of performance, inhabitation, and experiential character rather than the hegemony of singular form strategies.

Activating Manual and Digital Tools

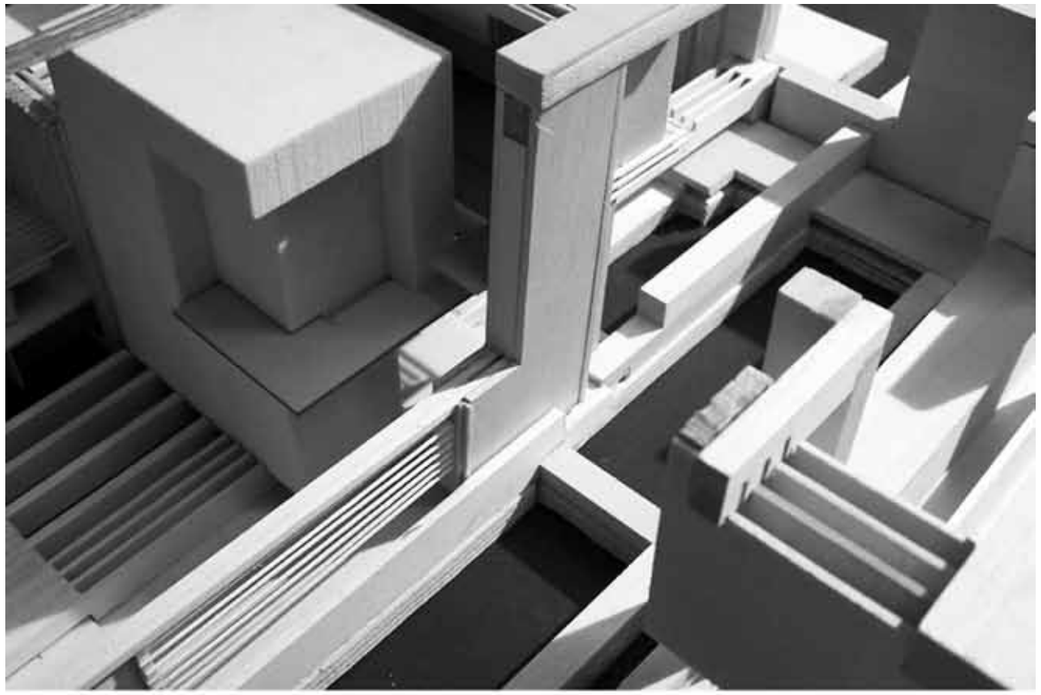
Architecture stands in time and space, but it is never still in its creation or in its subsequent existence. Building the foundation for such an awareness of architecture's active condition is an important curricular goal. We must strive to teach students that as architects, we are participants in a wide discipline, but more importantly, that our buildings must flex and change to accept a wide variety of forces in their lifetimes. While such flexibility should be structural to any project one might design, we are not referring to folding walls or to literally expanding spaces. Flexibility is an attitude embedded within design thinking. This attitude should be structural to a project in the way a space or detail can be formative to an architectural order by serving multiple issues without radical reconfiguration. Our job as architects is to reconcile the arrangement of space amongst all these forces. Despite the plethora of cultural, technical, economic, contextual, and program issues present within any one architectural problems, many architects pursue or invent additional forces independent of what already exists[13]. This is not surprising given the nature of architecture as a creative enterprise, but it is unnecessary. Such questions for architecture have in one way or another always been central to our discipline despite many historical stylistic tangents that have distracted the profession and academy along the way. Today, this is even more the case with issues of fiscal, programmatic, and energy sustainability no longer at the fringes of cultural attention.

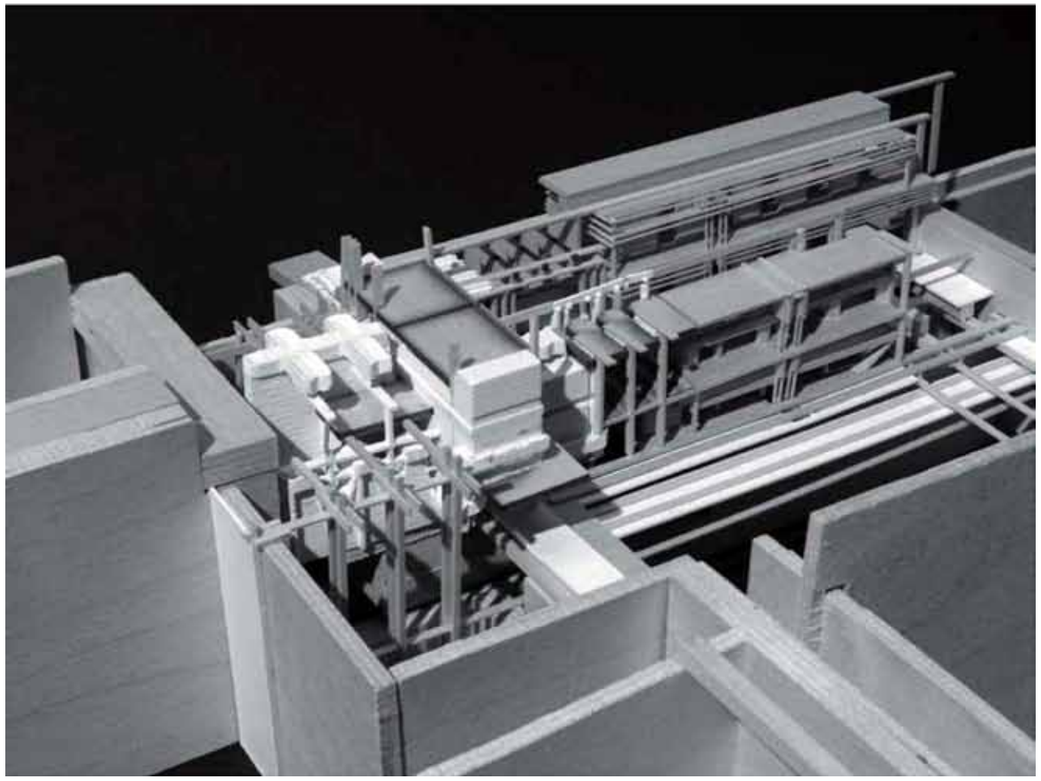
Notes

[1] Gervork Hartoonian notes the elevation as technology "defined not only as the process of making, but more important, as the destination of the building itself." (Hartoonian, 1994)
[2] When Rowe and Koetter speak of the intent "to provide a more tolerable theatre of existence" they describe a phenominon of modern urban design in which facsimiles of certain places are superimposed upon characteristics of another. This creates a condition in which architecture is divorced from the needs of a place and reduced to a stage-set. In contrast to this, the pedagogy we promote begins to develop skills for developing architecture generated from existential characterisitcs of place. (Rowe et al., 1978)
[3] The interdependent systems we speak of are not necessarily structural, but instead include the wide variety of forces that contributes to urban function. Christopher Alexander states that "This effect makes the newsrack and the traffic light interdependent; the newsrack, the newspapers on it, the money going from people's pockets to the dimeslot, the people who stop at the light and read papers, traffic light, the electric impulses which make lights change, the sidewalk which they stand on form a system – they all work together." It is this kind of urban system that can generate a nuanced architectural proposal. The foundations for reading a system like this are laid through compositional analysis. (Alexander, 1965)
[4] Our approach to reading context is composiitonal in nature. When Stan Allen points out that in a city "Infrastructure works not so much to propose specific buildings on given sites, but to construct the site itself. Infrastructure prepares the ground for future building…" he is suggesting the a similar method for understanding the urban context as the composition of urban infrastructure has the capacity to generate ideas for an architectural proposal. (Allen, 1999)
[5] This is similar to Sanford Kwinter's definition of form: "What I call true formalism refers to any method that diagrams the proliferation of fundamental resources and demonstrates how these accumulate into figures of order and shape...Formalism demonstrates first and foremost that form is resonance and expression of embedded forces. (Kwinter, 2008)
[6] Vittorio Gregotti reminds us that "...an interior right in interrelations rather than in form for which simplicity is, above all, a triangulation of the experimental field." (Gregotti, 1996)
[7] Gottfried Semper provides insight into the extent to which fundamental elements of form influence design at many scales, across the allied "technical arts." Through architecture "we also encounter those simpler works to which the artistic instinct was first applied." (Semper, 2004)
[8] Bötticher "distinguished between the *Kernform* and *Kunstform*; between the core of the timber rafters and the artistic representation of the same elements" in his understanding of tectonic "as signifying a complete system binding all parts of the Greek temple into a single whole." In contrast Semper's tectonic taxonomy divided the building into multiple built systems and distinguished only between "two fundamental procedures: the tectonics of the frame and the stereotomics of the earthwork." (Frampton, 1995)
[9] In the same way that Hutchins describes the multi-step structure of ocean navigation, we use the accumulation of drawings by the students as a roadmap to the work during the quarter. "In an external representation, structure can be built up gradually--a distribution of cognitive effort over time--so that the final product may be something that no individual could represent all at once internally." (Hutchins, 1996)
[10] This is the sort of diagram from which design can be extracted. According to Kwinter "The diagram is an invisible matrix, a set of instructions that underlies--and most importantly organizes--the reservoir of potential [forces] that lies at once actively and stored within an object or an environment. It determines which features are expressed and which are saved. It is in short, the motor of matter, the modulus that controls what it does." (Kwinter, Introduction, 2006)
[11] This strategy for implementing organization patterns in beginning design pedagogy is thoroughly detailed by Francis Ching. For Ching the five organizational patterns of architecture as being: "centralized, clustered, grid, linear, and radial." This studio pedagogy differs slightly in its approach as it uses the regulating lines of the grid to structure all of the organizational patterns and in turn defines peripheral positioning as the fifth possible organizational pattern. (Ching, 2007)
[12] This is where in the exercise the true manual-digital-manual transaction occurs. "All the major computations in this system are based on procedures that involve measurement (which is analog-to-digital conversion) followed by digital manipulation, followed by digital-to-analog conversion in the plotting of results on a chart." (Hutchins, 1996)
[13] James Turrell notes this when he says: "One of the things in architecture is that, generally, people are making forms and not spaces." (Birnbaum, 2001)

Bibliography

Alexander, C. (1965, April). A City is Not a Tree. *Architectural Forum* , 1 (122), pp. 58-62.
Allen, S. (1999). *Points + Lines: Diagrams and Projects for the City. New York*: Princeton Architectural Press.
Birnbaum, D. (2001). *James Turell: The Other Horizon*. Hatje Cantz Publishers.
Ching, F. D. (2007). *Architecture: Form, Space, and Order* (3rd Edition ed.). Hoboken: John Wiley and Sons.
Frampton, K. (1995). *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture*. Cambridge: MIT Press.
Gregotti, V. (1996). *Inside Architecture*. (P. Wong, & F. Zaccheo, Trans.) Cambridge: MIT Press.
Hartoonian, G. (1994). *Ontology of Construction: On Nihilism of Technology in Theories of Modern Architecture*. Cambridge University Press.
Hutchins, E. (1996). *Cognition in the Wild*. Cambridge: MIT Press.
Kwinter, S. (2008). *Far from Equilibrium: Essays on Technology and Design Culture*. New York: Actar.
Kwinter, S. (2006). Introduction. In J. Reiser, & N. Unemoto, *Atlas of Novel Tectonics*. New York: Princeton Architectural Press.
Rowe, C., & Koetter, F. (1978). *Collage City*. Cambridge: MIT Press.
Semper, G. (2004). *Style in the Technical and Tectonic Arts; or Practical Aesthetics*. (H. F. Malgrave, & M. Robinson, Trans.) Los Angeles: Getty Research Institute, J. Paul Getty Trust.
Semper, G. (1989). *The Four Elements of Architecture and Other Writings.* (H. F. Malgrave, & H. Wolfgang, Trans.) Cambridge: Cambridge University Press.





Roberto de Paolis - Marinella Ferrara - Danilo Morigi
Politecnico di Milano, Italy

Happiness in the city. Experimental teaching and research in the methodological design of the collective space of the city

Introduction

This paper presents the results of the teaching experience conducted in the Bachelor Degree Course in Industrial Design of Politecnico di Milano based in Como, on the theme "Happiness in the city", with the goal of designing "Street furniture solutions for the outdoor areas of the city of Como". The course has allowed us to experience a teaching methodology, which is capable to trigger a process of design that, using trans-disciplinary tools and methods (urban, sociological and anthropological analysis, scenario design, etc.), becoming a catalyst for social participation by focusing on users and their needs, either expressed or unexpressed.
The focus was set on different scales of design, from urban to object, from landscape to the enhancement of cultural and environmental communication strategies and the definition of perception and enjoyment of the environment. In all this we included all the elements that determine the functional, relational, expressive and communicative quality of the spaces and, with reference to the contemporary needs of requiring mediation between local identity and global languages. Together, these factors help characterize the sites, to define identity and recognition of spaces and to improve the quality of people's life who daily enjoy the collective areas of the cities.

Features of the Design Approach to Urban Projects

With reference to some thoughts by design theorist Andrea Branzi, we would like to share a few interesting concepts in order to understand the design approach to urban space, and to consider possible intervention synergies at different scales (city, building, object).
The difference between architecture and design is structural and is explained by their unique spatial strategies and relationships with humans.
The design approach to a project for a city is characterized by reading the urban area, giving central importance to users and local human activities, to detect the specific aspects of these activities and, at the same time, quality issues inside urban complexity.

Essential activities to this approach are:
- map local inner resources (physical elements like architecture, natural elements, infrastructures, routes, transportations, productive and social resources and also immaterial resources like local cultures and stories);
- read the characteristics of the community in terms of who is settling in and living in the urban area (their lifestyle, traditions, behavior and shared values);
- study relationships and processes between social and individual, all of which characterize the life of the city as a complex and dynamic organism.

For architecture, thinking starts from a defined area from which a project is developed and accomplished, by dialoguing along the way with the surroundings on the basis of an intention and a single construction program; design starts from a complex conception defining punctual and widespread microstructures, which can be transformed or removed, properly or improperly used.
The intervention of design comes out as a "weak plan" (Branzi, 2010), i.e. a project of micro-systems able to reformulate the context by starting from mass behavior, activating networks of resources, emerging technologies and distribution of potential creative solutions. This method meets contemporary operational modes and thoughts, characterized by a pattern of "weak and diffused modernity", where the project searches for reversible structures, blurred limits and incomplete ways, which correspond to the logic of a society committed to reforming and developing new rules, regulations and statutes so as to tackle a state of perpetual crisis, responding to a strategy of continuous innovation, leaving definitive structures for moving to reversible flexibility.
Often design microstructures, also named "swarms of objects", are not the result of a global plan, but rather the result of the localization of specific actions distributed in the urban space, influencing the relationships between the place and the individual, between the individual and the community. Together, these microstructures create an independent urban local quality that is self-representative, experiential, often functionally dominant and memorable in the minds of citizens compared to architectural boxes. The object scale is, in fact, closer to everyday reality.
The ability to determine the quality of the "micro-climate" is often considered more important than the form of buildings (Price, 60s)[1].
The experience of sensory materials, colors, textures, decorations, lights, smells, and sounds defines the quality of spaces.
In the approach of design, places are considered "significant potential spaces," in which personal experience is essential.
Therefore even the iconic value of solutions gains importance.

Tools of the Design Approach

We must also consider the need for the design activity to keep cross-connections with other disciplines. Designers are looking for items that can stimulate the transversal comprehension of the project culture in order to elaborate ideas that go beyond merely technical, aesthetic and formal solutions. John Thackara briefly expressed this need: "In a less-stuff-more-people-world we still need systems, platforms, and services that enable people to interact more efficiently and enjoyable. These platforms and infrastructures will require some technology and a lot of design"[2].
Interdisciplinary relationships are needed to explore and understand, to affect and alter, the variety of relationships to which the projects relate. The next section will address this.

Social Engineering / Cultural Engineering[3]

Cultural engineering is a research method that uses the activation of trans-disciplinary resources and intermediation capacity in order to configure a broad view of design solutions that respond to communication strategies of wide range interactions with the user, including the deep links between planning, politics, cultural and social issues.
According to this method, one must provide for the unexpected consequences of the design because any project will always have side effects. For this reason, designers and planners must consider the implicit and explicit interests of the people involved (and invested capital) and understand the appropriate way to express such interest in the project. Professionals are well-advised to adopt a way of thinking related to social systems rather than to objects or specific products, according to a vision of services with a participating nature.

Ethnography for Design

In the approach to design, urban design is located in an area of intersection between industrial production and the end user. The design requires the skills and ability to translate culture, needs, and behaviors and to transfer these interpretations into industrial offers. These capabilities are often implemented with the support of ethnographic methods and sociological reflection. The ethnographic contribution is crucial when focusing on the key points of the definition of sustainable consumption and production of new services offering new scenarios and lifestyles, and to support the horizontal networks of collaboration between individuals at the local level (Morelli, 2011). In the ethnographic approach, humans are at the heart of the projects, not as one factor among others in a broader context.

Psychogeography

Psychogeography is a survey methodology for urban spaces experimented in the early 50's by the movement of Lettristi defined as "the study of the precise effects of geographical environment, laid out consciously or not, which acts directly on the affective behavior of individuals"[4].
It is a method for the deconstruction of the urban areas, which highlights the relationship between urban environment and the human experience by studying the correlations between psyche and environment for creative re-definition of urban spaces.

Viewing Scenarios

Among the typical tools of design, arising from the different areas in which design operates, one in particular has been used in the methodology adopted for the course "Happiness in the City": viewing design scenarios. This tool has allowed us to collect and display all information collected by the methods previously described.
The purpose of scenario design is to define, structure and set the project goal. It is preceded by a phase of context analysis, including information collection, which gives shape and scale of the intervention, defining at the same time actors and values in the physical and social space in which a project is undertaken. This becomes even more complex when working on an urban scale, in a situation where the number of factors and actors involved is considerable and is therefore influenced by the behavior and social action of the community.
In our project, information was taken directly from the main places involved in the design process, through different levels of analysis, measurements, photos, and video footage, in order to collect the most accurate and direct information, whether overt or hidden, offered by the spaces of the city. This led to a clear and direct representation of the environment in which future products or services will find a precise context. The research project used interviews and field experiences, which are more valid and current, with no intermediary between users and designers of space. This phase of the investigation ended with the definition of scenarios; the team found a way to develop, reconcile, and make sense of the signs, customs, and paths of actors who live in everyday urban spaces. Through careful analysis of the various entities that use urban spaces, their origins, their habits, and their cultures, the designer is able to identify, extract, and refine ideas, concepts, and images of what might be a different relationship to space, resulting in a change of behavior.
By understanding the scope of the design characteristics and the context in which it operates, the next step was the definition of values, concepts, and possible addresses for the development of strategies and products. The decoding of a rebuilt reality led to the vision of solutions, products, projects, services, giving shape to possible, if not plausible, worlds, in which the central position is occupied by the end user, the figure that gives meaning and value to results of the creative process.

Design Process and Methodology in an Urban Context: Projects for Como

The learning experience created and studied by the authors focused on furniture design elements and systems for the city of Como, developed and conducted in one semester in the Laboratory of Final Synthesis. Participating students were in their third year of a bachelor's degree program in furniture design at the Como campus.
The working hypothesis was to verify how urban design, through the system of objects, can help to generate new meanings in the space of the city, and to create wealth and improve the quality of life through human relationships. The size and detail of an object are essential components of design strategies aimed at elevating the perceived value of "anthropic" space and its impact on the natural environment, which is increasingly oriented to sustainability and the mindful use of energy resources. The didactic intent was to transfer the awareness of context-targeted planning to students involved in a design laboratory that we might call "situated design," so that they become attentive to peculiarities of a specific site, context, or landscape, while introducing their morphological, typological, and technological determinations.
The design process has been split into three phases: pre-project analysis and research; scenario and meta-project; project development.
The first phase of analysis and pre-research students made was carried out in the field with the aim of acquiring state information and identifying critical situations in the urban environment. Methods included combining the classic tools of detection and mapping with those typical of the multifactorial social analysis, such as interviews with users, identification of the target, and the use of videos, polls, social networks, and focus groups. The data results have been restated using SWOT analysis methods, identifying, for each field analyzed, strengths and weaknesses, threats and opportunities.

In summary, the analysis phase was divided into five major components:
1. Analysis of the urban environment, land, and environmental
2. Study of trends in the medium and long term relating to the European design
(e.g., fashion, graphics, product, arts, transportation, mobility, food, leisure, entertainment, youth culture, sports, etc..)
3. Study of best practices in urban areas where the design-oriented approach is more developed
4. Analysis of ergonomic requirements for use of products, user-centered design, and ethnographic studies
5. Metadesign identifying the needs of consumers and end-users (target); gathering information from the trade publications; performing analysis of, and benchmarking to, competitors; analysis by type and sector of products, processes, and technologies used in the production of materials, semi-finished products, components, and finishing processes; reconstructing evolutionary genealogies of systems of objects; analyzing the technology opportunity and manufacturing within the Como area (i.e., traditional areas of textiles, wood, and furniture); analyzing the supply system.
At the end of the analysis phase, all the gathered information gathered iswas served used to formulate the project brief, which outlined that led to the requirements on which the groups have used to begin developing different scenarios reference and references, articulated around the following themes:
a) increase and expand of tourism actractivity in the city;
b) encourage an interactive city: by making it a place to meet, socialize, and integrationintegrate;
c) re-appropriation of public space, to remedy desolation of open space;
d) use of facilities and environmentally sustainable energy;
e) enhance and strengthening connections between the urban space and the Como's lake and rivers;
f) upgrade of existing buildings and monuments at lakefront, both historical and modern (the neo-classical and the "city of Rationalism");
g) restore of brownfield sites: to reconnecting existing urban voids with boroughs;
h) reorganize of relaxing space by creating the perception of natural landscape;
i) provide housing infrastructure for the homeless people;
j) reorganize of mobility with to produce low environmental impact (e.g., shared transportation)
In the last phase, which was dedicated to the project development and product engineering, the students have worked individually, starting with concepts developed by the group, and created project proposals coming to address detailed design and developing models for studying the proposed works. The project outcomes have produced a typological variety, which is difficult attributable to categorize in a singular fashion, thereby confirming the fact that, even when as it is adopted using a standard methodology in project design, the diversity of places and contexts, combined with diverse student talents and interested, produces multiple nuanced interpretations.

In summary, the results of the project (the proposed interventions) can be organized in the following way of intervention corresponding to the areas:
1. Create green areas in Piazza Cavour, and benches, with play morphologically articulated in space, kiosks, tourist information points, and lighting and info-panels powered by photovoltaic panels;
2. Refurbish the walk to Villa Olmo refurbished with seats that are convertible by users, station points for artists and landscape architects, memory fountains for the trades and labor, employuseing membranes shelters and shape memory metal, and create walk viable walking alternatives to rafts on the water with areas for stops and recollection;
3. Redesign of the Porta Torre with structures that enhance ethnic and social integration, create shelters for waiting for buses, light equipment to facilitate the integration of homeless and disadvantaged consumers;
4. Varese avenue marked bywith archways framed with a tensile structure arc, reminiscent of the "arches" of the Roman city, and picnic tables facing the users of the nearby elementary schools;
5. Equip lakeside gardens and monumental area equipped with workstations featuring interactive projections on custom facades, "bubble-temporary space" for young people to socialize meeting, fitness trails, and outdoor gym or fitness space outdoors;
6. Castle Baradello and the surrounding hills, systems observation of individual shots of landscape and cityscape
7. Redevelopment of the ex-former Ticosa factory with a seating system so it can be used as a skate park, sitting / rickshaw with individual quiet space, for self-study, banners inspired by urban

graffiti, textile attached to beams, benches with integrated lamp shade, and heated wooden seats;
8. Verdi Square with integrated shelters / and seats, designing include a product-service of bike-sharing service, corporate image re-design, benches with idrochromical graphics, and re-charging points of portable electronic devices;
9. Convert Piazza del Popolo and the residual green spaces into an open-air multi-sensory, experiential water museum;
10. Enhance the banks and pedestrian walkways along the Cosia River and student residences near the university's campus, and include a constellation of lighting and rotating lighted watermills.
Educational experimentation has produced a new generation of items and furniture systems designed to meet the emerging social needs of citizens and respond to renewed interest in aesthetic appreciation, communication, and relational experiences of contemporary life.

Conclusion

Didactic experimentation proposed hereby shows some peculiar elements.
First of all the field of intervention: the collective space of the city was selected primarily because of its rich of layers of historically consolidated meaning, and, secondly, because the space is particularly susceptible to multidisciplinary and multimodal approaches to design, a typical feature of contemporary design disciplines. A specialist sectorial approach would be limited to the scope of the product-process-communication-consumption cycle, but an open mode, supported by a "cross fertilization" between multiple influences from the fields of sociology, cultural and communicational processes, and from the diffusion of social practices induced by social networks, which have undergone unprecedented transformations in urban space evolution, languages, forms, and modes of use.
Another peculiarity is the concept of "situated design". In fact, even though for more than two centuries industrial design - as a science of the artificial aimed at optimizing production, in a perspective in which project, process and product were not connected to the places and contexts because of replicable industrial scale - nowadays design tends to take the territorial dimension of the project as an opportunity and a responsibility in the specificity of the "genius loci", contextualized in the relationships with the local and urban environment.
The project will integrate the design of objects to some outdoor actions that are intended to involve citizens in a contemporary reinterpretation of participation in the destiny and in the development of urban environments with actions denouncing the most urgent problems.
The resulted projects are new concepts of metropolitan objects and devices declined in the systemic urban-scale. Those products become signs in the territory conveying the identity of places, on the one hand improving the characteristics of the specific context, on the other hand taking into account the need to relate of people and the request of aesthetic fruition of places in contemporary living. All inspired by the potential of new sustainable technologies and by the local productive resources that are specific expressions of that territory.

Notes

[1] Sul pensiero di Cedric Price: H. Ulrich Olbrist, Re:CP Cedric Price, Lettera Ventidue, Siracusa, 2011.
[2] Thackara J., In the Bubble. Designing in a complex world, Cambridge, 2005, p.4.
[3] For the concept of cultural engineering, see: Höger H., Cultural engineering: il design come progetto globale, in Höger H., Design education, editrice Abitare Segesta, Milano, 2006, pp. 141-148.
[4] Definition appeared in the first issue of the Bulletin of the Situationist International, published in 1958. See Wikipedia http://it.wikipedia.org/wiki/Psicogeografia.

Legenda

00. Flag course image
01, 02 and 03. Analysis Board (design by Matteo Mugnai, Mauro Pocobelli, Giuseppe Rizzato, Virginia Vivaldi)
04. and 05. Analysis Board (design by Federica Roverato, Francesca Pizzi, Valentina Tomezzoli, Matthieu Rogeaux)
06. Process design Board (design by Federica Roverato, Francesca Pizzi, Valentina Tomezzoli, Matthieu Rogeaux)
07. Conceptual map (design by Giulia Salvadori, Eleonora Monzani, Paola Maggi, Alessandro Triglia)
08. An outlook on the projects developed within the course (design by Luca Mazza, Mathieu Rogeaux, Qing Wang, Davide Oriani, Laura Vassena)
09. An outlook on the projects developed within the course (design by Pegah Janghorban, Paola Maggi, Davide Santambrogio, Giuseppe Rizzato, Alessandro Triglia)

Bibliography

Branzi A., *Ritratti e autoritratti di design*, Marsilio, Venezia, 2010.

Carrol J.M., *Scenario Based Design*, Addison Wyley, New York, 1995.

Cibic A., *Rethinking happiness,* Ed. Corraini, Mantova, 2010.

Höger H., *Cultural engineering: il design come progetto globale*, in Höger H., Design education, editrice Abitare Segesta, Milano, 2006.

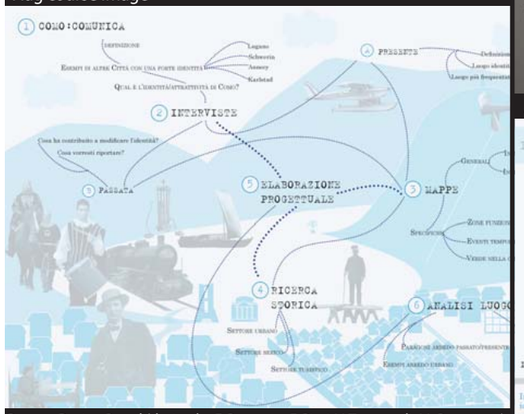
Morelli N., *Active, local, connected: Strategic and methodological insights in three cases*, in «Design Issues», n. 27, 2011.

Olbrist U., *Re: CP Cedric Price, Lettera Ventidue*, Siracusa, 2011.

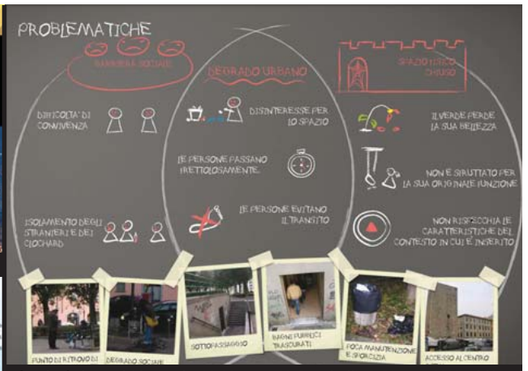
Thackara J., *In the Bubble. Designing in a complex world*, MIT Press, Cambridge, 2005.

Vazquez D., *Manuale di Psicogeografia*, Ed. Nerosubianco, Cuneo, 2010.

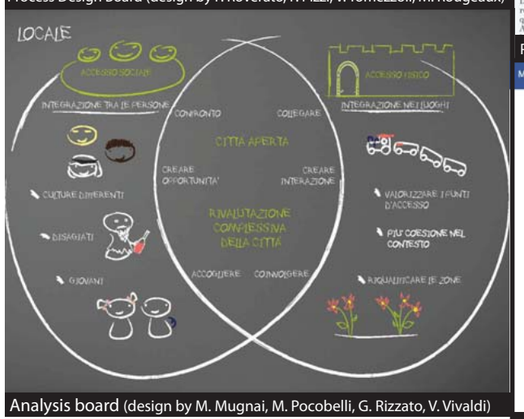
Flag course image



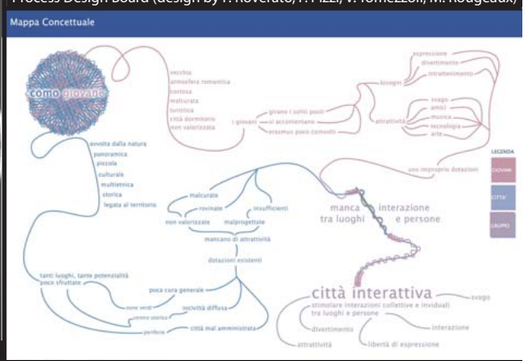
Process Design Board (design by F. Roverato, F. Pizzi, V. Tomezzoli, M. Rougeaux)



Analysis board (design by M. Mugnai, M. Pocobelli, G. Rizzato, V. Vivaldi)

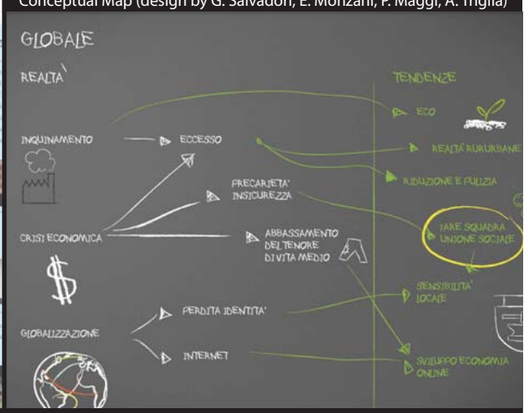


Analysis board (design by M. Mugnai, M. Pocobelli, G. Rizzato, V. Vivaldi)



Conceptual Map (design by G. Salvadori, E. Monzani, P. Maggi, A. Triglia)

Process Design Board (design by F. Roverato, F. Pizzi, V. Tomezzoli, M. Rougeaux)



Analysis board (design by M. Mugnai, M. Pocobelli, G. Rizzato, V. Vivaldi)

Han Linfei
Beijing Jiaotong University, China

Chinese Architectural Education in the Rapid Economic Development

Abstract:
This article is on the background of Chinese reforming and opening up in 1978 and the following rapid economic growth, introduced the environment of Chinese society on changes of architectural demand and the current situation of defect, trying to give an objective analysis of the cause of this defect. The writer attempts to find the education connotation of Vkhutemas and then help to improve Chinese architectural education.

Key Words:
Economic growth; Architectural forming; Vkhutemas; Forming education.

A. Since the year 1978, the rapid growth of China's economy and the reality of defect in architectural design.

Since the reform and opening up in 1978, China's national economy has got rapid growth. In 2011, China consumed a quarter of the steel and one half of cement production of the world, became the world's largest "construction site". Economic growth drives the development of the construction industry, construction demand rises sharply, and therefore the majority of China's city began accelerating construction, because the social demand has accelerated the construction speed. The good news is construction industry in all its aspects especially architectural education develops quickly. Many students choose to major in architecture; architects can get many opportunities to take practice. The negative effect of this booming construction is that increasing construction speed is bound to bring quality decline, then generate a group of low level buildings and destroyed the whole image of the cities in China (Figure 1).

B.The reasons of defects in architectural design in China.

1. The changes of times demand in China.

In the early days of Chinese architectural education, we inherited the tradition of ' Ecole des Beaux-Arts ' in Paris. Architects cultivated by this education system designed many buildings with "academic" color. However, with the construction demand increases rapidly, the objective conditions have been unable to meet the traditional design pattern, resulting in a number of academic buildings in low level (Figure 2). This phenomenon is the result of the changes of the times.

2. Shallow understanding of the essence of architectural forming in Chinese architectural education.

The Bauhaus was a school of design, building and craftsmanship founded by Walter Gropius in Weimar in 1919.It was transferred to Dessau in 1925, where it continued until 1928,and then transferred to Berlin, ultimately closing in 1933.The ideas and teaching of the Bauhaus have exercised a profound influence throughout the world. Modern architecture respected by Bauhaus is more suitable for the Chinese contemporary realistic demand on construction to traditional mode in ' Ecole des Beaux-Arts '.Based on this trend and influence of China's rapid economic development, the number of architectural universities and colleges in China has raised to a great scale. According to the data, until 2010 the number of architectural colleges across China providing majors of architecture, city planning, landscape architecture, history of architecture, architectural technology, has already reached 295. Within them, there are 286 providing undergraduate program, 70 with master program and 14 with Ph.D. program. The total students on campus count to 105,932,with 94,802 undergraduates, master 9,269 and doctor 1,861(Figure 3).Until May of 2010,45 colleges and universities have passed the professional education evaluation of the architectural committee, with 44 passed Bachelor evaluation and 22 passed Master evaluation. The government has kept supporting the development of architectural education, putting more investment into teaching funds, professional talents, new architectural buildings, lab facilities and so on. This has dramatically promoting the qualification and environment of architectural education in a whole. Now China has already formed the comprehensive philosophy of architectural education and course system during the persistent discovery in the teaching system. And the average managing level of architectural education in China has been enhanced greatly.
But, colleges quantity is not proportional to its quality .The main problem is we failed to understand the essence of forming deeply. We learn the spirit of modern architecture from Bauhaus, but we only see phenomenon off essence, result in some strange buildings frequently generated (Figure 3).

3. The lack of forming education in China.

Although China's architectural education has a major breakthrough in terms of quantity and quality (Note 1), but there are still some problems that cannot be avoided. The main problem in teaching is the non-systematic and non-scientific framework of the educational system. In particular, training in architectural forming, unsystematic and unscientific teaching methods lead to lack of forming ability. The design is not closely integrated with the practice and is not synchronous with the development of techniques and materials.
The basic training of modeling has nothing to do with the modern architecture form in some colleges in China. For example, the traditional art curriculums cultivate students' skills in painting, but it cannot develop students' understanding of the architectural aesthetics. Chinese architecture education is still not fully separated from the traditional art education. According to statistics, more than 80% sketch lessons in architecture are gypsum still life and portrait, this kind of traditional art training and modern form training run in opposite directions (Figure 4).

The scientific method is taking the professional content for architecture as a background to set correlated curriculums. This can help to inspire students' abilities of abstracting the construct of graphics. Constructed training should not be limited to the pursuit of composition form but aim to training students' understanding of the law of composing. At present, some graduates are one-sided talents because of a non-scientific education system in the universities. They cannot be competent to the needs of the new era of urban development.

It is because of the education training lack of studying the nature of forming that leading to output unqualified building talents for society.

C.Tracing the origin-Learn the first essence of architectural forming education.

Bauhaus and Vkhutemas together constitute the origin of modern architectural forming art in the world. Learning their advanced education concept can help us to better understand the essence of forming education. Because China and Russia in the historical, social, human aspects related to a higher degree, so we are more suitable for the study of Vkhutemas.

Vkhutemas is an architectural art school in the 1920s in Russia, which constitutes the origin of the modern architecture and art together with Bauhaus in Germany, building academic reputation in the world. We can retrospect Vkhutemas's contribution to modern architecture and art education in order to contrast the basic form of training in the Chinese contemporary architectural education, to investigate forming concepts and training methods of Vkhutemas for reference.

1. Systematic education structure in Vkhutemas.

The form training in Vkhutemas is full of systematic and scientific. Including point, line, surface, and the composition of these three levels; parallel, intersecting, perpendicular to the laws of space; constitute regulation of the same element in the expression of different themes; different elements constitute the law to express the same theme and so on.We can find its systematic curriculum from students' homework (Figure 5,6,7).
The forming education should be throughout the entire professional teaching. Forming training, from the basis of premedical education to the teaching of professional modeling training, plays an important role at different times. We should take form training as a complete system in the professional education.

2. Scientific form training in Vkhutemas.

According to the difficulty level, figures of the three abstract training above are gradual.
On one hand, from the aspect of psychological education, the form of training should be consistent with the law of the students' mental awareness. The awareness of students is a gradual deepening process that from simple to complex, from the phenomenon to the essence, from concrete to abstract. This is the basic law of human development, teaching only go with the nature before to promote students' abilities.

On the other hand, the form and composition of the basic training take a preparation for the design of practice and material accumulation, and modeling training only for the purpose of design practices can be professional valuable. Modeling training needs to consider new materials, new technology and new technique of expression, which are closely related to the practice.

For example, Vkhutemas's teaching content is more close to practice and conducive to the development of students' personality. The curriculum of training consisted of two parallel course of instruction, one devoted to the study of materials and craft and the other to the theories of form and design. Instruction at the school began with a preliminary course of six months, during which period the student worked with various materials-stone, wood, metal, clay, glass, pigments and textiles-while he received elementary instruction in the theory of form. The purpose of working and experimenting with materials was to discover with each particular material the student had naturally the most creative aptitude, for it was an essential purpose to bring out the latent creative faculties of the individual. It might be that one student had a strong feeling for wood, another for the harder materials, stone and metal, another for textiles, another for pigments and colour.He was instructed in the use of tools and later in the use of machines that in industry have supplanted these tools. In the school devoted to form and design, instruction was given in the study and representation of natural form, in geometry and principles of building construction, in composition and the theories of volume, color and design.

3. Students' projects under Vkhutemas's training.

Under the pattern of Vkhutemas's training, the students' projects reflect high level in modern architectural form (Figure 8, 9). In this view, these students work belongs to the outstanding works be worth to learn and draw lessons from. The school is responsible to train talents for the society, therefore the education problem is worthy of attention. Only students in school to obtain a professional education can they make contributions to the society after graduation. The deviation of school education will be a direct result of talent training failure, at the same time will hinder social progress and development. We should attach importance to architectural education and we need to identify the value of history. Past experience is worth to draw lessons from for content; it will greatly improve the accuracy of education.

D. Conclusion.

China is in a stage of rapid development of cities which have increasing demand for construction. In this context, architectural education of universities deserves attentions. On one hand, China's architectural education has been spread rapidly; on the other hand, its development also brings some drawbacks. The main problem is the architectural education lack of systematic and scientific structure. China's architectural education, especially in teaching the architecture form, is not closely integrated with the practice and is not synchronous with the development of techniques and materials. In a word, it is one-sided. In this respect, the Higher State Artistic and Technical Workshops (Vkhutemas) is worth learning. How the architectural education adapt to China's rapid economic development of the city needs to be considered. Chinese modern architectural education should learn teaching methods of Vkhutemas which is taken as the forming origin of the modern architecture so that to help students to understand the essence of forming and technology, to avoid "strange" architecture, to meet the needs of talented architects in the rapid development of the Chinese economy.

Notes:

1. In China, the education of architecture has already harvested the comprehensive progress over nearly 60-year's development, and has started to take our great shape. Our first founding 30 years can be dated back from 1949 to 1979. During the 1950s, in China then, the ideas of models of architectural education were entirely taken from the Soviet Union. In that model, the teaching system was mainly founder through department adjustment to serve the national economic construction. In the 1960s, the teaching system of architectural colleges started to emphasize on hands-on aspects as China then realized the important combination of architectural education and practice. Then in 1970s, as of the very impact of political movement in China, the education of architectural suffered a hard time and even met some destruction. The preparation of basic courses of architecture dropped dramatically and so the Architecture in full meaning existed only in name. After 30-year's ebb and flow in architectural education development, the educational pattern has owned its initial shape. The characteristics lie in the emphasis in the connection of teaching and practice as well as subject development and national construction. The post 30-year's development in architectural education in China started to take off from1980 to 2010.
In the 1980s; China established the fundamental basis in the Great Architectural Education Development. During that time, China began to take a series of adjustments in Architectural education, including the restoration of master graduate student training ,the opening of Ph.D. student training and the new academic body of Architecture, planning, history, landscape, and technology. In the 1990s, we stepped a little further in Architectural education and make clearer sense of its direction. Many universities started to transform the original department system of Architectural education to school system in which more and more interdisciplinary advantage gradually formed. Then in 1992, higher school education evaluation committee of Architecture in China established and started to carry out the evaluation in Architect degree. Now in China, vocational education has been gaining greater preparation in Bachelor and master's architectural education. At the beginning of 21 century, Chinese architectural education has opened a new chapter of development and thus the full and comprehensive Architectural education in China has gradually taken shape.

Figure 1 Shenyang Jinquan Square

Figure 2 A hotel of a city in China

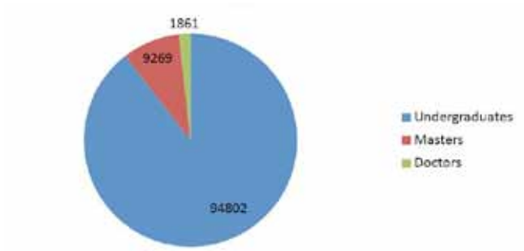


Figure 3 The Number of total students major in architecture in China (2010)

Figure 4 Wuhan Qintai Theatre

Figure 5 Sketch homework of Beijing Jiaotong University

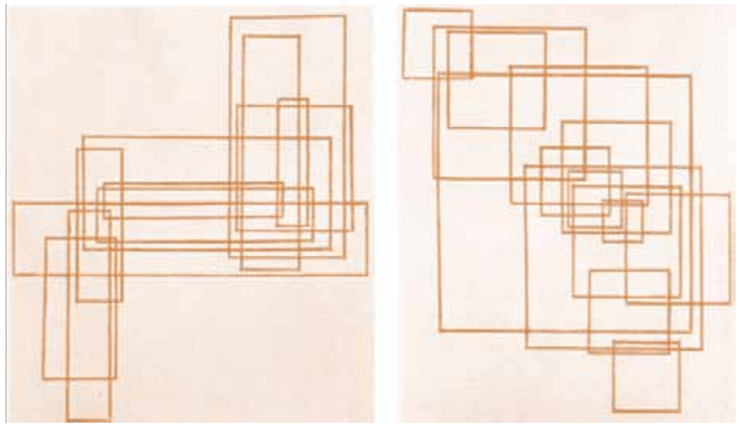


Figure 6 Form with the same pattern but different sizes and scales

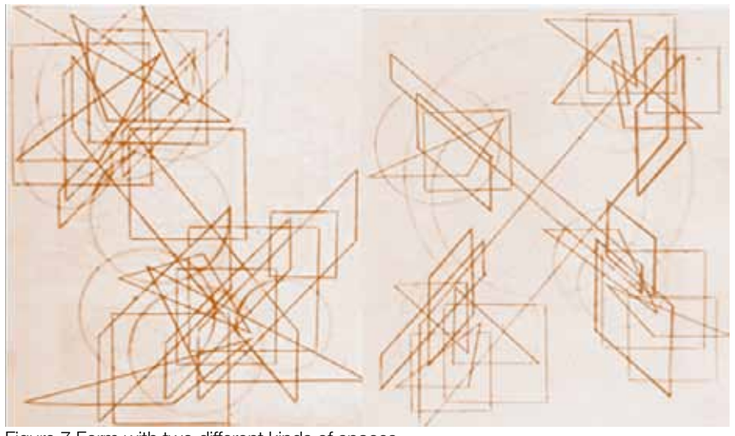


Figure 7 Form with two different kinds of spaces

Figure 8 Express deep space with the same pattern and axonometric perspective

Figure 9 The Russian communist party member youth league club, grade 3, 1925

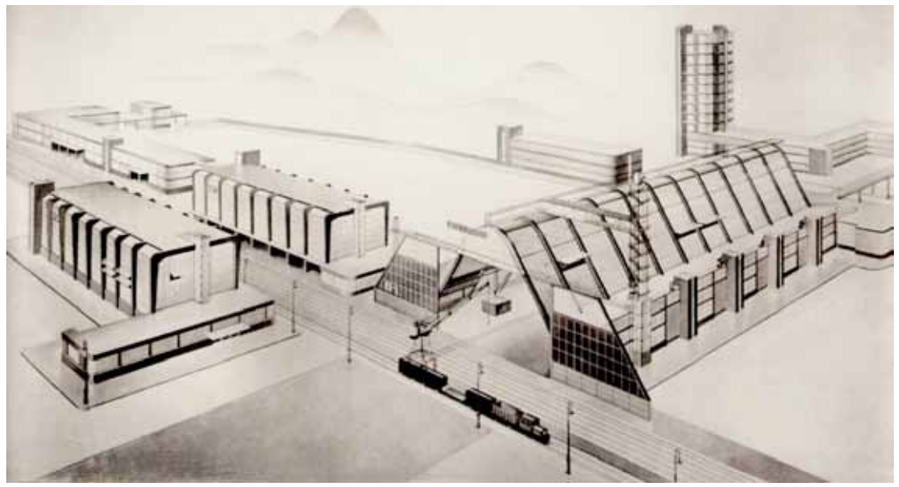


Figure 10 File city in Heihai coasts, grade 6, 1927

Matteo Ieva
Politecnico di Bari, Italy

The city as an organism

1. Introduction

The city, in its current evident aspects, is the touchable representation of the civilizations stratified over the time and an original evidence of the clotting of the community contribution, expressed by a complex process of "*ethnic / cultural / linguistics / social / building construction osmosis*". In other words the city is a set of syncretic factors, coexisting and, at the same time, diachronic, manifested through a diverse and rare organic synthesis. Identifying every settlement complex - from the little town to the big metropolis - as a result of many anthropological activities made to conquer and structure the space for domestic - social - producing use, means feel its existence as a "system" whose elements constantly change. This entity is constituted by a "*set of parts strongly linked, cooperating on the same order*" who shows, as simple element of a complex, different characters coincident with many different cultures that have overlapped. In this sense, city shows its character as < living organism > in which changes get meaning from civil variations defining its evolution.

2. Aims

Who interprets the city should try to reread the "signs" of a progressive mutation process and also should be able to research and use suitable instruments, capable of to search the "causes" that rule urban organism phenomenon and, in the same time, applicable in flexible way to the different real cases. These reading instruments should be different in relationship with the characters of each "city type" to be analyzed, as geographical and cultural area.
The courses "Typological and Morphological Characters of Architecture " and "Architectural Design", in the Faculty of Architecture of Polytechnic of Bari, left to the writer, are focused on the research on the evolutionary process of the anthropical structures at the different scales and also to spread the necessary knowledge to understanding urban development and critical planning exercise.
Understanding city at different scales allows to explain the settlement function as element within a bigger system (territory), and in the same time as organism made by a set of smaller elements.
This teaching method, based on fundamental typological – processual / design assumptions (partial and completed by other subjects), is based on the notion of *Organism* and *Building Type*. This theory recognize the city as an organism made by interdependent parts and permanently in changing. City is also the place where the socio-typological differences, as buildings show during the time, are related to human necessity to obtain space to use as individual or collective employment. Whose knowledge, made through the reference to the phenomenal of "Husserl roots", leads to understand them in their real nature of varying structures and not "a priori" existing beyond the becoming experience.
It's possible to pursuing this aim through a method that wants to reproduce the mechanism of the transformation made by humanity. These transformations are legible through the common and transmissible characters that both *city organism* (made by building aggregates organized in a hierarchy and diachronic, in relationship with routes and urban poles) and *building organism* (in its processual evolution) express.
Moreover the ways that urban organism shows itself, with its contradictions, considered in a conceptual "shape", are the beginning of the planning thinking. This attitude express our capacity of being able to be active in our epoch, through a critical and not parasitic exercise breaking with the past but in continuity with what has been historically transmitted and inherited. This idea is correctly explained by the German word *Machenschaft*.

3. Method and main notions

Now we'll fix the main criteria useful to analyze urban structure, in relation with the notion of **organism** and **type**. This explanation is indispensable to delineate the method useful to "read" the pre-modern, modern and contemporary city transformation, identified within the settlement as spatial-temporal and cultural differences.
It's important to underline that these concepts are fundamental for the theory structure and for the exegesis using this method. These notions, with variable meanings (even if always comparable between themselves), are in many studies made by Italian researchers, which studied urban phenomenon. They tried to clarify the matter of the recognition of the historical condition of becoming, in its manifestations, typical in a cultural area. Among many academics, are remembered in particular S. Muratori, G. Caniggia, G. Strappa, because to their studies and knowledge are related these reflections, and L. Quaroni for the relation with urbanism, A. Rossi with its fundamental studies of the city's architecture, C. Aymonino with its close examination on the modern city origins and development, F. Purini with its acute observations on complex urban phenomenon, C. Martì Arìs with its references to the notion of Type always in the same Muratori's mould.
-The Organism, that according to Strappa (Strappa, 1995) can be defined as "*the set of elements linked by necessary relationship that concur as unit to the same purpose*". It allows to analyze the needed link between the parts (without this every formative process is lacking of any meaning) and also allows to interpret building, tissue and city characters. The interdependence condition between different component parts in the urban organism, as between routes, building types, aggregates, permit to read structural relationship among buildings and let see the relations expressed by the way the changes happen (continuous and discontinuous).
-The Type concept, as "*heritage of common and transferable characters that comes before the making of organism*" (Strappa, 1995), is based on Muratori's sintesi a priori intuition and explains a concept and not an identification of an object. A foreshadowed not real yet reality present in the builder before building. Progress of the idea of structural search of the environment built with its common and transmissible characters that reveal the civil substance of a social structure developed in a place that has overturned the positivist vision typical of the architectural "a-temporale" plan, claiming a method set out the *principle of the knowledge* (1).
The Typological Italian School of Rome and Milan has deepened the research towards new views based on new matter built on "*ermeneutica del tipo*", that wants to reconstruct the process of the rebuilt of anthopic evidence. The *architectonic type* means synthetic idea of a space made for anthropic activities in its progress of specific transformations, recognizable and assumed by everybody (spontaneous and critical) in a spatial and temporal field.
The notion clarifies that in the same period and in the same place the realized structures, if carried out to solve similar needs, are identical and besides structures that follow each other in the time and in the same place, change unitedly.
The reading of human transformations, based on quoted notions, clarifies in particular that all different scales are linked by needing relationship and joined in relationship among each parts (*organism*). For each anthropic structure realized in a place is always possible recognize a previous one (historical) that identifies the differences of types, tissues and urban organisms. Recognition of their formation and transformation process and relativity of their value that allows dialectics of changes and integrations.

4. The comparison with other schools of thought

The differences between schools of thought mentioned are few, and sometimes substantial. Within the limits of this paper, we attempt to describe them briefly. In particular, will be highlighted the main issues of method that characterize the Italian schools of S. Muratori, G. Caniggia, G. Strappa, on the one hand, and A. Rossi and C. Aymonino on the other. They have had greater prominence in the international debate, but the difference still requires attention by the critics of architecture. In the different methodological positions the other figures mentioned can be understood, but only using a very general theory. For example, there is a clear conceptual distance in the significance of organism, that influences the other concepts related to this. C. Aymonino, taking up the postulate of A. Rossi (Rossi, 1966) of the "city divided in parts", puts his attention on a plan very different from that of "city as an organism", called for the first time after the Venetian experience by Muratori (Muratori, 1959). Given that, the city is no longer seen as a continuous process of transformation in which every part participates, but as a collection of testimonies temporally identified. This indicates a substantial difference on how to read the so-called "urban phenomena": In the case of Muratori, Caniggia and Strappa it stems from the idea of continuity of the process –from the formation to the transformation- and from the global unity, phase by phase, conquered by the entire urban organism; while for Rossi and Aymonino the "reading method" is the result of the urban built interpretation through the form, in which the city is understood as "a great product, a work of engineering and architecture, more or less large, more or less complex, which grows in time "(Rossi, 1966). This is a very complex question that is explained only within the specific theoretical positions. For Muratori, Caniggia and Strappa, for example, the shape of the city is a synthesis of all components involved in defining it, and this must be interpreted simultaneously from the synchronic and the diachronic point of view. Rossi, similarly, elaborates several inferences, starting from linguistic structuralism refered to De Saussure and, by adhering strictly, recognizes (as for the language) the synchronic level, leaving out the condition of temporality on which draws mainly Caniggia, which considers the architecture as a product of collective events, deriving also from the studies of anthropology, which were widely circulated in the 60's especially with the work of C. Levi Strauss (Marzot, 2003). This suggests that the structural gap between the two schools of thought lies in the concept of type. This notion can be considered the foundation of all reasoning that is attributable to the antropic facts. Rossi, who openly cites the venetian lessons of Aymonino, has a vision fundamentally close to the positivist statement of Quatremere de Quincy in which there is not the time factor; i.e. the type is not identified as a concept, previous to its building, that changes in space and time; therefore, even the concept of diachrony motivates the different points of view . This aspect is amplified further by referring to the identification of the principle (the first), underlying the organization of space: the arché. Caniggia represents this concept as the initial factor that qualifies the space and thus is able to generate it; is the archetype, the self-sufficient organism continuously in transformation. Rossi, instead, identifies it as the "invariant" in the evolution of the city, as recognizable identity and not editable. These expressions of thought find a strong coherence in the design results, according to the statements of each school. They express: for Muratori, Caniggia and Strappa a strong need for re-construction of the critical-analytical process of formation and transformation of the "type", with an innovative hypothesis of design in continuity with the interpreting (especially with the moment of maximum "efficiency" expressed by the organism); for Rossi and his school, a reminder of the history of the place, but without the need to describe the idea of unity and temporal mutation of organisms. So the design, without the principle of diachronic structure, can easily recover its primary foundation in the idea of "model".

5. Study cases on urban organism transformation

Here there are some study cases useful to explain, as city organism sample, the matter explicated.
The transformation process of each city type (Ancient, Medieval, Renaissance, Baroque, of the Nineteen century, Modern, Contemporary / European, Asiatic, US, etc.) is observed and subjected to comparative analysis and critically evaluated and this let to rebuild the behavior "law" that rules the city.
In brief I'll examine just: 1.The typical "role models" as appear in the ancient re-used cities; 2. The foundation and mutation phenomenon of the Medieval and Renaissance settlements; 3. The mechanism of Modern tissue's change – innovation and the Contemporary city's complexity. I'll investigate on cases in which the typical and also documented transformations in the coetaneous tissues will be recognizable.
1. The first example is related to the Roman foundation (or re-foundation) city and is useful to study / deduce an ancient settlement's background structure in the current aggregate. Of course is possible to read the ancient structure when the transformation from ancient to new aggregate happens with gradual transformation and also there's no traumatic substitution or any long interval of neglect (images 1, 2).
Lucera: Daunian settlement in IV – V century B.C. and Roman allied during the II Sannitica war, in the 314th B.C. became colony of Roman law and in the 90th B.C. *Municipium*. The next medieval Norman-Svevian enlargement and the stability during Svevian-Angevin age determined new walls, still legible at the moment. The suppositions on the colonial structure settlement, formulated by archeologists, can be integrated by some consideration helpful to rebuilt the planned town structure, just using typological instruments. These are: the organic relation between the route structure within the walled town extending to the countryside; the relationship between routes and aggregates in its current shape that comes from ancient layout; supposed urban hierarchies; diversification between buildings type within the Medieval walls in all different settlement's parts; the different idea of type in the aggregate; deformation made by medieval process; special building's location – raising (churches, palaces, convents). The first organization greed was recognized by an external rejected route system (concave or convex), by advancing on the street (partial and progressive public space infilling) as typical filling the public space during the Medieval age, by spontaneous tissue extra moenia along routes external the original nucleus. The blocks structure remains the ancient planned structure, while the current city aspect seems to came mostly by medieval transformation, even if with appreciable alterations during later centuries.
Another interesting case of urban transformation is Piazza Ducale in Vigevano, clarified by the application of this method. The tissue transformation that takes place close to the pre-existent castle is clarified by the existent building Type reconstruction in relation with the routes structure. It comes from the "node" of the urban and territorial road (that goes along a set of unit houses born around castle's walls, as pomerium originally free of any buildings) that comes from Milan, Vercelli, Pavia and Novara. These building types are made of multi-family courtyard houses and are diachronic variant based on the enclosure notion. The square, as important "urban pole", is a real example of unity, obtained thought partial restoration of the houses in the *pomerium* area, and trough the solution on the baroque façade of the Saint Ambrogio's Cathedral, that even if breaks the "language rules" characteristic in a church, expresses an exemplar case of organic synthesis.
3. The case of the modern and contemporary tissue is a comparative study on some Italian city sample, in which is underlined a research based on morphological data (image 3).
In Rome, in Tiburtino, Valco S. Paolo, Tuscolano II quarters, born during the second postwar period (period known as Neorealism) show up new experimental components no longer concerning syntopic processes and above all mediated by models of central European importation. In this phase urban settlements are different from aggregate structure of previous decades, and show an organization based on combination of buildings, sometimes morphologically different, in opposition. Very different buildings type (row houses, in-line tower houses) are mixed according to subjective, willful, critical evaluation.
Until now we were talking about some tissue of Italian city samples, where it is possible to recognize typical transformations. Before introducing the contents of the method applied to the project, we'll try to set up again briefly the problem of the most complex urban organism transformation, shown as the example of the "metropolis type" and in an amplified and contradicting form, by the anomalous meaning of the so-called Megalopolis (image 4).
The Philadelphia case in some interpretations. The main trouble for a big city - as a megalopolis - is the disintegration of the traditional *Forma Urbis* idea and of the urban identity. Even if in the US metropolis is characterized by exasperated serial iteration, made in this way in just 3 centuries, is still possible to recognize the necessary relationship between different territory parts and it's still clear the dialectic between buildings and countryside, between downtown and periphery, between housing and production area. While in new realities everything is uncontrolled and often reduced to shapeless heap of built up. The concentration of millions of inhabitants, as a result of an extreme process of urbanization producing an amplified confusion of urban spaces, is causing a new and unexpected level of use the area and the downfall of every social equilibrium. This kind of places are ruled by the indifference of the whole hierarchy built and lack an order well-balanced between housing, Tertiary's sector areas, commercial areas, production areas in all urban space scales possible, as is made in the best tradition of the city (in metro

polis too). This space is assuming the paradoxical "*a priori* shape" aspect and seems in lot of its parts equivalent and homogeneous.
New icons of representation, the so-called "containers", are accidentally put into the city, as effort to ri-polarize it. These are architecture that seem to evocate the fast dynamism condition, typical in the new millennium, showing ephemeral dimension and communicate the idea of transparency, lightly and movement.
If this is the post-metropolitan territory, each possible idea of organism is degraded because there is no real foundation on which it can be based on. However the metropolis situation, particularly in the USA and in Europe, seems to be not subjugated by underlined situations. Philadelphia can be considered as example, from its first establishment during the second half of XVII century, even with its contradictions as urban structure grown quickly with overmuch serial addictions, because was always be able to find a new "eufonia" as a realistic conciliation between the conflicting forces that made it, phase to phase.

5. Method use on the planning process. Didactic examples.

As exemplification and demonstration of the unity and indivisibility of the considered notions, here there are some didactic exercitations, completed during the Architectural design course. Every example has to be considered as result of "re-planning" process that reflect on current city and then is proposed a modification as "transformation" process in which are related urban routes, housing and special buildings.
The pole of the plaza, hypothesized on the basis of real vocations detected, is expressed through the specialization of the space defined by the intersection of routes more hierarchized.
The buildings themselves, which indicate the overall unity surrounding it evenly on all sides, arrange housing and service functions. Along other routes, an urban fabric of mono-family and multi-family row houses and in-line houses, reclaims the part of the studied aggregate (image 5).
The other planning experimentation is related to the third-year Course of Architectural Design, during which is deepen the topic of the parish church in a real Apulian context. The choice fell on outskirts context, where is clear the "crisis" condition, typical of contemporary architecture. The religious centers research was focused on to set up a correct congruence relationship between the areal characters and the site vocation.
(image 6).

Notes

1. Ieva M., 2011: *Caratteri dell'architettura nell'età della globalizzazione*. In: *La ricerca*. Proceedings of Rete Vitruvio first international Congress, Bari, 2-6 May 2011, vol. 2**, Bari, p. 745-754.

Legenda

Img 1 - Evolution phases and planned structure of the Roman town of Lucera
Course of typological and morphological characters of architecture, tutor arch G. Rociola; students L. Di Micco, A. Di Paola, D. Ferrante, A. Fiore, M. R. Giangualano, D. Melillo
Img 2 - Vigevano. Hierarchy of paths and reconstruction of induced transformation in Piazza Ducale
Course of typological and morphological characters of architecture, tutor arch. G. Rociola; students R. A. Minervini, M. E. Recchiuto, G. Topputo
Img 3 - "Moderno italiano" (Modern architecture in Italy), Tiburtino districts, Valco S. Paolo, Tuscolano
Course of typological and morphological characters of architecture, tutor arch. G. Rociola; students V. Cuoccio, V. Salierno, D. Spirito
Img 4 - Philadelphia. Evolution of the urban organism; evolution of a part of the metropolis
Final workshop. Prof A. Petruccioli (Coordinator), G. Martines, Tutor Prof. M. Ieva, undergraduates students A. Passiatore, M. Somma, M. Mundo, A. Di Biase, D. Altamura, S. Pellicani
Img 5 - Transformation of the periphery in Lucera, through the reconnection of the urban fabric and the project of a square
Course of Architectural Design 4, student D. Fedele, student A.P. Sancineti
Img 6 -Transformation of the peripheral urban fabric through the integration of a parish center in Foggia and Bari
Course of Architectural Design 3, student S. Petti, student M. Mussonghora

Bibliography:

Aymonino C., *Origini e sviluppo della città moderna*, Padova, 1971

Cacciari M., *La città*, Rimini, 2009

A. Camiz, *Riqualificare la periferia con nuovi tessuti: il Casilino 23 (Villa de Sanctis*), Roma, in *Il progetto di architettura fra didattica e ricerca*, Proceedings of Rete Vitruvio first international Congress, Bari, 2-6 May 2011, vol. 2**, La Ricerca, Bari, 2011, pp. 827-836

Caniggia G., *Strutture dello spazio antropico*. Studi e note, Firenze, 1976

Caniggia G., Maffei G. L., *Lettura dell'Edilizia di base*, Venezia, 1979

Carlotti P., *Studi tipologici sul palazzetto pugliese*, Bari, 2010

Gregotti V., *L'architettura nell'epoca dell'incessante*, Bari, 2006

Ieva M., *Bisceglie. Studi per un'operante storia urbana della città pugliese*, Bari, 2011

Maretto M., *Il paesaggio delle differenze. Architettura, città e territorio nella nuova era globale*, Pisa, 2008

Martì Arìs C., *Le variazioni dell'identità. Il tipo in architettura*, Torino, 1990

Marzot N., "*Il contributo di Gianfranco Caniggia alla teoria del progetto urbano contemporaneo. Alcune riflessioni sui concetti di linguaggio e materiale*", in C. D'Amato Guerrieri e G. Strappa (a cura di), Gianfranco Caniggia. *Dalla lettura di Como all'interpretazione tipologica della città*. Adda, 2003

Muratori S., *Studi per un'operante storia urbana di Venezia*, Roma, 1959

Purini F., *La misura italiana dell'architettura*, Bari, 2008

Severino E., *La filosofia futura. Oltre il dominio del divenire*, Milano, 2006

Strappa G., *Unità dell'organismo architettonico*, Bari, 1995

Strappa G., Ieva M., Dimatteo M. A., *La città come organismo. Lettura di Trani alle diverse scale*, Dip. ICAR, Bari, 2003

Riondino A., *Ludovico Quaroni e la didattica dell'architettura nella Facoltà di Roma tra gli anni '60 e '70. Il progetto della città e l'ampliamento dei confini disciplinari*, Bari, 2012

Rossi A., *L'architettura della città*, Milano, 1978

Dirk Janssen - Katrijn Apostel
Artesis, Belgium

Blocks, schools and books

This paper is about the city of Antwerp, the collaboration between its school of architecture and its service for urban development.
The architecture school has arisen within the Royal Academy of fine arts.The Academy was founded in 1664 and is therefore after Rome, Paris and Florence, the fourth oldest art academy in Europe. After a period of independency the faculty has become part of the Artesis university college but is still situated in the historical city center on the same campus. The campus does not have the seclusion of an enclave but has an open heterogeneous structure, integrated into the city. This relationship is spatially but also substantively, the school inhabits the city.
More than being present, inhabitation is a form of commitment to the city and its society. This commitment is expressed in the extent to which the city has always been a laboratory to the design studio's. The school is turned inside out when appropriate, hence allowing to study the matter of architecture in its own concrete terms and context.
The spatial structure of Flanders is strongly characterized by the phenomenon of urban sprawl. This inevitably leads to the very slow growth of the Flemish cities. With its regional policy to put an end to further urbanisation, the city of Antwerp has been investing in a strong urban policy during the past ten years to increase density and ensure a more attractive living environment. Regarding this ambition the city of Antwerp and the school of architecture, have a collaboration agreement since 2004.
The subject of this agreement is both research by design, which is linked to the educational program of the master curriculum, and theoretical research, backed up by the research division.

Case 1: the city block

The Context. Urban transformation is situated on two levels, cities expand while at the same time the existing fabric is in a state of continuous transformation activated by a process of cell renewal. In order to control and guide the quality of these processes into sustainable results, it is important to develop strategies and know-how through experience and research.
The urban fabric of Antwerp consists of a series of irregular city blocks, unequal in size. Each of them with a particular character and highly differentiating from the basic model. Within the city centre and its 19th century belt the structure is highly satiated, whilst outside it is left completely unsatiated and heterogeneous. The oversized city blocks, far extending the required minimum to accommodate housing with gardens around the edges, have absorbed every possible programme ever since the 19th century. In this evolution there has been no attention towards the spatial capacity of the concerning city block.
This process lies at the basis of the whimsical fabric with an uncontrolled growth which has created loads of gaps and residual spaces. This irregularity causes spatial accidents and conflicts while at the same time it allows for a particular kind of beauty and spatial quality to exist.
"Historical maps teach us how a city expands on its outskirts, but being a living organism it is continuously changing from within as well. Buildings are rebuild or demolished...with or without permit the citizen consistently alters its territory. The individual never ceases to explore the edges between itself and society. The sum of these activities is enormously powerful but almost imperceptible due to its fragmented nature. It is a process of cell renewal barely influencing the image of the city.
The image evolves into new variations through pixel-wise transformation. This growth causes a spatial slowness that stands in contrast to the speed of activity.
In 2004 the city has set up a City Block Team with the intention to develop a series of integrated projects within various city blocks through which they aim to stimulate collaborational practice. This decision has been an important point within the city's spatial planning policy. Due to the strongly parcel-related property structure the construction activity within the existing fabric has continuously remained small scale and limited within the outlines of the parcel. The building activities on the scale of the parcel have always been a private initiative, controlled by the city but left unguided. With its City Block Team the city intends to provide more guidance and direction in this process. It was put into practice but the need for methodology gradually increased. In order to concede to this deficiency, the research group of the school was requested to focus on this specific material during the period of three years. During the process of the research the City Block Team semestrially selected a couple of blocks. The criteria for this selection were: the excessiveness of the city block, vacancy, the absence of open space and city property. Usually these criteria occurred in combination forms. The different criteria and the property structure were taken into account in order to define the project and formulate the central research question.
The central question in a city block project is: How can the different opportunities and side conditions be put into use to improve in the spatial quality for the entire block?
The design research. Due to the wide range of designs by various participating students within one project, it is possible to stimulate a diversity of approaches and strategies. This allows the student to be involved in the comparing study as well as the individual design. One of the members of the City Block Team is present at the midterm presentations, participates in the jury and provides the students with the necessary feedback.
The results are exhibited and joined into different case reports by the researchers at the end of each semester. Each design is completed with a discursive note and the report will be closed with a series of generic conclusions. In this particular case of research the reports were gradually used as a communication tool by the City Block Team (Urban Development Antwerp) in negotiations with real estate developers. The comparing studies had provided a multitude of sensitizing images that proved to be very useful during negotiations. At the same time these documents were used as a reference work by the next group of students.
The theoretical research. The generic part of the research was completed by the research team and developed in agreement with the City Block Team. It contains four subcategories.
The first case consists of a morphological research. Through the use of GIS-software the fabric of the city block was mapped in accordance with different parameters: density, height and depth of the city block,… The following two categories, 'opportunity map' and 'private garden projects', are somewhat more specific and were ordered by the city, providing them with an instrument to prepare their policy. The 'opportunity map' indicates the city blocks that are qualified (by size and shape, theoretically and according to certain criteria) for construction within their enclosed spaces. The part 'private garden projects', maps the potential open spaces within the blocks and analyses which blocks have a ginning priority to enable further development of private gardens. The final part of the research contains a theoretical approach towards city blocks and city block projects, in this part the design research method for the city block project is developed. The instruments thus presented are the research results and were gradually developed with the experience gained throughout the entire process. This part provides a general description of the various aspects involved in the process of analysis, design and evaluation of city block projects. It is divided into three chapters: Parameters, Toolbox and Models.
The parameters are used as a guideline during the research phase and the toolbox functions as a checklist during the design phase. The last part shows an overview of the morphologic models that have come about during the design research.

Theoretical research reports

The book. The result of research by design is not so much a design but a research result, a report. Being architects this probably gave us the unsatisfied feeling that stimulated to gather all the knowledge gained into a book. In the meantime the City Block Team had been developing various projects and some of them were being carried out. It was not a hard job to convince the city in a coproduction for this publication. The variety in material: design research, theoretical research and experience gained through practice, inspired to join form and substance. We have used the city as a metaphor and the structure of the city block as a concept for the framework of the book. Besides the parts on research and experience through practice, 9 essays have been added: 4 observations and 5 reflections.
The book also includes 3 photographic essays and the former city poet, Joke Van Leeuwen, contributed with a poem which can be found on the cover. The book was rewarded for its design with the 'Plantin Moretus Price'09.

The book has provided a theoretical framework for urban planning. Within the practice of urban policy it has become a reference in the evaluation and guidance of urban projects. The book has no judicial power but is a fine instrument to sensitize owners and developers to the importance of the city block on a higher scale. In the educational program of the school of architecture, on the other hand, the book is used as a thematic reference in order to offer methodical tools in research and design study. The wide range of content offered on the subject of the city block ensures that the book can also be used for theoretical study. Methodically speaking it is a reference for future research projects while providing a substantial base for cases like the one we are about to illustrate.

Case 2: the school in the city, the city in the school

The context. The next research project we did in collaboration with the city came about due to the future lack of capacity within educational services.
The expected population growth, the growth of the number of students for every level of the education system that comes with it and the lack of capacity within the existing infrastructure will cause some important developments and adjustments in the patrimony of school buildings within the near future. Merely restructuring the existing patrimony won't be sufficient for the expected amount of students. The construction of new schools is a necessity.
For this research project we had two clients: the city's department of education on one hand and the city's department of urban development on the other hand. There are two mayor providers of education in Flanders: public education, which is active on both the municipal and the Flemish level, and free education, which consists of denominational education and alternative schools. Urban policy has a dual responsibility. First of all it has to provide the city with a sufficient amount of schools, that need to be scattered enough to ensure everybody has a possibility to walk to school. Furthermore, the city itself is a school owner and has elaborated a substantive and organizational master plan for the schools within its network.
The emphasis on the Campus model applies to every single one of the schools within their educational network: each school is supposed to aspire a collaboration with its partners. The aim is to create a multiple use of infrastructure and hence implement a more efficient use of the available means. Various similarities can be found in the concept of the broad school. New infrastructures for schools can be applied as a catalyst for neighbourhood developments. The research group received a request to do some research into the potential and the consequences of the campus model within the specific context of the city of Antwerp. Elements such as the vast diversity within the existing infrastructure, the complexity of the urban fabric and the variety within the educational offer make it virtually impossible to develop an all-embracing model. As a result we focussed on case studies through design research. The theoretical section was sustained with studies in literature and international references, the results of the design research and the knowledge gained during the city block project.

The design research. This was once again a case of very precise assignments within a clear context. The cases were selected by the educational department. It concerned a series of thematic campuses, like a cohabitation of different kinds of technical education and the city's department of technical services. Another example is the fine arts campus with its variety in forms of full or part-time education. The extension projects of existing schools and redirection of alternate functions into school buildings have also been included into the design research. The research method used in previous studies was refined. This project also succeeded to include the immediate stakeholders such as the school boards into the process to help define the project and involve them in feedback sessions. This has a double effect as these people are charmed by the visionary qualities and creativity of the students, on top of which they themselves come up with not only the obvious, but also some very unexpected, visionary, solutions. While at the same time the enthusiasm of these outsiders has a undeniably positive influence on the students and adds a different dimension to the study. And once again the design results were used as research material due to their multitude and diversity. The design research presents us with a design on the level of the case as an outcome while providing an input for theoretic research.

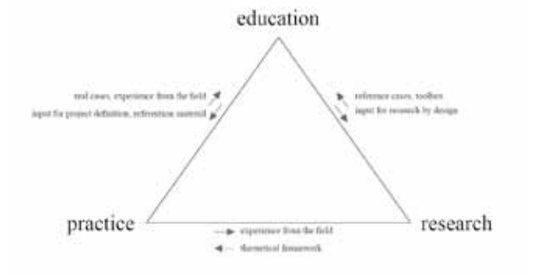
Design research report

Theoretical research. Both design research and theoretical research focussed on the idea of the broad-based school. This concept perfectly translates the vision of the department of state-funded schooling, aiming for interaction between the school and its environment. This vision is by no means unique, it is used throughout the world in innovation projects within the educational system as schools are no longer considered to be closed institutions. The broad-based school is not limited to providing education, but cultivates a broad development for children through collaborational projects with cultural institutions, sport services etc. to provide a broad educational offer for children and their families. The theoretical research contains a study on the development of a prototype for a campus (a morphological concept) with a broad-based ambition (a programming model). In addition, the inductive process from case study to theory is deductively reversed, the designs from the case studies are analysed by means of the advanced toolbox.
The book. The book that is being completed at this very moment is titled "school in the city in the school". From the perspective of school in the city the accent lies on the relationship between the campus and the urban fabric and the concept of the broad-based school. The City in the school focuses on urbanity within the outlines of the campus, the school conceived as a city. This book is composed in the same way as the book on city blocks. The publication is much more than just a research outcome, in its introduction the infrastructure of the schools is described in a series of critical explorations, essays in which a couple of external authors active within (different fields, like) architecture, sociology and education, open up a wide range of approaches to the study. The perception of the department of education towards its policy is clarified in the second part. The third part is the research report, the theoretic part and a selection from the design research. The book is concluded with a couple of essays reflecting upon the qualities and limitations of the broad-based school within the urban context. Once again two photographic essays were included. With this publication we are aiming to provide an instrument for the various parties active within the construction of school buildings, it maps new approaches and commisions while trying to inspire students, architects and commissioning organisations.

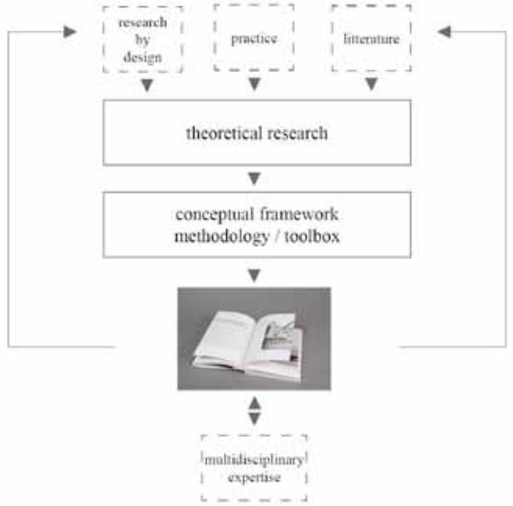
Conclusions

Methods. Both of the research projects are examples of practice-based research, the input was a result of the experience gained through practice and design research. Both kinds of input are essential to the process as they complete each other. The experience opens up new insights in the complexity and diversity of the side conditions that need to be taken into account. The designs, in this case made by the students, explore a range of different possibilities. These are examined in a comparison study to assure their accuracy towards the given program and, above all, their effect on the given context.
Nexus. The nexus between education and research is successful due to the possibility of a collaboration with a group of students, their designs are material for a comparison study. The freedom granted to each individual student and the diversity in approach have an undeniably positive influence on the research project. The assembly of the midterm reports is a valuable medium to pass the knowledge on to future students. Studying within the framework of a research project adds an academic and social value to the individual study trajectory. The nexus between education and pratice adds great value to both parties. Students learn to design within the context of a realistic planning and site, while being confronted with real stakeholders. At times when policy members were present during the presentations, this added a new dimension for the students as the external parties judged the projects with a critical attitude towards feasibility. The works made by the students can be used as an input for the policy to construct a project definition or help them in the communication process with developers. Students value the fact their designs can be of use outside of the institute as well.

The nexus between research and practice generates knowledge. There is a limit to the research capacity of the urban services and it is simply impossible for a research group to simulate reality in this matter. The collaboration between the school and the city, however, is not that evident. Apart from the functional reasons, there is a great difference in involvement. The actual researchers are very directly involved to the matter. The members of the planning office, on the other hand, have an additional task in guiding the research (by means of meatings, defining the projects, evaluations) that can only be valued in an indirect way and in a later stage of the process. The professors guiding the design research have to work their way into new cases with specific programs and side conditions at the start of each semester whilst being responsible for the post-project assistance like presentations, exhibitions and reports. The practice, however, has delivered a methodical approach that gradually lightens the process. At the same time it brought in a considerable amount of knowledge on the city we inhabit as a school.



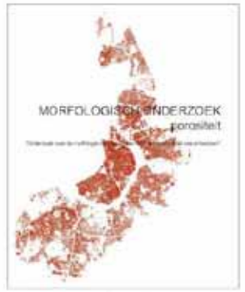
Valorisation, the book. As stated earlier, the value of the book far extends the mere publication of the research outcome. We strongly believe a wide and integrated working method is of great importance to the research and have included this wide and multidisciplinary approach into the book. Designers value the cohesion between form and content but the cohesion between meaning and form is of great importance as well. A book is architecture, matter, construction, it has a form, boundaries, the cover is a façade. Any which way, the book is an excellent form to valorise the outcome. The schoolbook hasn't reached this phase yet, but the book on City Blocks has made its way to be a reference work for both policy and educational purposes.



theoretic framework

opportunity map

private garden projects



morphological research

Yvonne Knevels
PHL Provinciale Hogeschool Limburg, Belgium

Mapping the spatial identity of a location relying on methods from visual art

Good architecture interacts with the spatial context. If this interaction is missing, it comes at the cost of public space. This is why the quality of life in so many rural villages is under threat, because contractors choose to build generic, detached houses which are not in keeping with the character of the surrounding landscape or are not in proportion to the surrounding buildings typical of the area (Thissen et al., 2001).
The PHL architecture course pays a lot of attention to the first phase of the design process, namely observing the location for which the design is to be made.

Existing observation methods, such as those used by practising architects to explore a location, are restricted to taking measurements and photographs. The outcome therefore remains extremely technical and unable to capture the essence of the location. Good architecture requires a more layered interpretation, an interpretation that pays attention to the history, landscape, use, etc. of the location but also to a multi-sensory interpretation. In this paper we aim to show how the work of conceptual artists can help obtain this kind of layered interpretation of a spatial location.

In practice, six projects by six different artists have been selected. Walking is a central theme in the works and this links all the projects. The artists walk to allow their work of art to mature *in situ* (Careri, 2001). Each project comprises a dedicated description of how and what the artist registers and how he represents this in a physical medium.
These methods of observation and representation are translated into spatial observation methods and then presented to students studying architecture and interior design who are required to use them in a series of urban locations. The students are also asked to use a number of ethnographic observation techniques and urban planning analysis techniques. By subsequently comparing these with the artistic methods, we look at whether our approach may result in different kinds of observations of a location.

The focus in this paper is on translating the method used by conceptual artists into observation methods used by architecture students. Part 1 describes this translation. Part 2 contains a brief sketch of the student assignments and part 3 gives an overview of the main conclusions.

1. From artwork to spatial observation method

1.1. Guy Debord / Situationist International: dérive
Guy Debord is known as the co-founder of the Situationist International (SI) in Paris in 1957. The SI is a group that reacts against the influence of utilitarianism and capitalism in urban public space. For example, they refer to Le Corbusier's *l'Unité d' habitation as "une nouvelle technique de contrôle*" (a new control technique). Guy Debord defends *unitary urbanism*, a flexible architecture which is determined by the people who live in it[2] The design of a city, he claims, is much too weighted in favour of the needs of production and consumption, whereas it should be determined by the spontaneous action of the people who live there. Debord's solution was to invent the "*dérive*", an unplanned walk in the city, to give people back their lost liberty by stimulating play (Heynen, 1999).

The aim of the *dérive* is to deviate from functional daily routes and to explore unknown areas. Debord outlines techniques for carrying out such a **dérive**. For example: form a group of 2 to 3 people and start walking. Turn into the second street on your right. Or: walk for 20 minutes in a westerly direction. Or: always choose the street with the fewest cars... Using their *dérives*, they made maps, collages and texts which they distributed via their own "international situationnist" magazine. This is shown by Guy Debord on a streetmap of Paris, cut up into a collage showing a number of (physical and other) connections.

Debord invented the *dérive* as a spatial observation method and can therefore be used as such. In the context of the design assignments this is translated as the *intuitive exploration of the location*. Each student takes along an aerial photo on which to write down his/her first subjective impressions on the spot.

1.2. Reineke Otten: streetology

Reineke Otten works around the identity of cities, and is particularly interested in the social aspects of public space. *Streetology* is a visual way of analysing the city using photography. Otten walks and takes photographs of whatever catches her eye: the variety of bricks in a neighbourhood, the colour scheme of an area, the style of shop windows, the way people make contact with each other, etc. Photos are taken at random. As a walker she can notice and record the slightest detail. She photographs recurring themes in all their possible variations. Once back home, she categorises the photos and groups them around one theme that seems to be typical of the city or country in which they were taken[1]. By grouping the photos in series, they become more powerful and show a typical feature of a place in all its shapes and colours. The choice of theme for the series is not always self-explanatory, but after the intense 'walking – observing – photographing' it soon becomes clear what is typical for the city/place in question. Together, the series exemplify the identity of a city by highlighting precisely those aspects that are specific to the daily life of the place in question.

Streetology is translated into spatial observation method called series *observation*. The student is asked to make keen observations during the walk and to photograph anything that stands out. He/she also needs to observe people, habits, relationships, etc. in the process. After all, these are what determine the way an area looks. After the first explorations, the photos are put into categories on the basis of the theme that they portray. In order to make a series of this theme, the subject is photographed in the same way in all its versions. This helps underline the uniformity of the series. Finally, the photos have to be arranged in rows as in the above picture.

1.3. Wim Cuyvers: traces of autism

Wim Cuyvers is an architect and a theorist. During his time at the Jan van Eyck Academy in Maastricht he set up the *Traces of Autism* project. This project is based on the findings of the French educationalist Deligny on record the movements of autistic people (Wim Cuyvers, interview 2010). The aim of *Traces of Autism* is to study places with a really public character using alternative observation methods and to name their qualities and make them visible. Again, walking is central to this study, because it is deemed to be the least high-value form of movement, reserved for those who can't afford a car. According to Cuyvers, this perspective is necessary in order to test the public nature of the public space. What is specific to this project is that the researcher has to focus on one phenomenon while walking and must record every version of it. This focus means that other aspects are excluded, and the observation is 'pure'. For example, the researcher might concentrate on bus shelters or on rubbish bins. A second aspect is that the researcher sticks to one fixed route such as a highway, a bus route or an administrative boundary. All the recorded information is processed into maps, photographic series, endless lists and texts.

Traces of autism is translated into a spatial observation method called focus observation. The student is asked to focus on one element in the location that keeps recurring. In the spirit of the Wim Cuyvers' project, the element must be something controversial, something that grates.
Every object must then be photographed and named. The name should capture the typical features of the object, or its position in the area. The lay-out of the representation is a matter of choice. For example, it could be designed as a catalogue.

1.4. Koen Peeters and Kamiel Vanhole: Bellevue/schoonzicht

Koen Peeters and Kamiel Vanhole are both writers who are very concerned about the fate of Brussels and Belgium. Their book Bellevue/schoonzicht is an account of the multi-day walk they undertook in the Brussels Canal zone, an "*Itinéraire du paysage industriel bruxellois*" (Itinerary in the industrial landscape of Brussels). It is a reflection on the transformation the area has undergone in the last ten years, as well as a reconstruction of what Belgium is and was.
On the way, Peeters and Vanhole note down all the business names and languages of businesses (Dutch or French) in a table. This evolving table is the thread running through all their reflections and reconstructions. The walk is finally turned into a 'narration', with a streetmap of Brussels at the back showing the route they followed.

Bellevue/schoonzicht is translated into a spatial observation method called *text observation*. The student is asked to list any written text found at the location. This may range from advertising hoardings to traffic signs, names of shops, graffiti, etc.
Every text has to be noted on a map or aerial photo of the location in precisely the place where the text actually appears. This creates a visual representation of, among other things, concentrations of text. The layout of the representation is a matter of choice. For instance, text that is more conspicuous in real life can be printed in bigger letters.

1.5. Richard Long: A walk across England

Richard Long is a pioneer of land art. Walking in a landscape is an actual part of his work. In *A line made by walking*, a work he produced in 1967, Long claims that walking can be an artistic act in itself.
Long's works of art allow the viewer to take part in the experience of walking. The conceptual materials that Richard Long so carefully creates are very sensory in nature. Sometimes they are all-encompassing impressions, sometimes they focus explicitly on one single aspect (e.g. the direction of the wind). In addition to impressions, the artist also collects material that he finds whilst walking, e.g. driftwood, mud from a river, stones etc. He uses this material to make an installation, either *in situ* or in an exhibition space.

The project called *A walk across England* is the account of an 11-day walk across England from the west to the east coast. It is a book that contains photos in chronological sequence that record the various types of landscape and landscape elements, both in panoramic format and in close-up. Each photo is accompanied by a text explaining the impression the location made on the artist.

Throughout the book, the reader can follow the walk by means of all kinds of impressions. These are mainly observations that are so obvious we forget to take note of them; which we implicitly observe, but do not explicitly describe. Richard Long does explicitly name them, for example the tiny slow snail that is also going for a walk, or the combine harvester that smells of the grain harvest and warm summer weather. These are multisensory impressions that all combine to simulate the overriding experience of the walk. The last page in the book shows a photo of the North Sea and the beach. This is the end of the walk.

A walk across England is an explicit multi-sensory interpretation of a location. In the context of this research, we have chosen to register each sense separately. *A walk across England* is therefore translated as three spatial observation methods called *auditory observation, colour observation and tactile observation*. The student is asked to plan a route, then walk it and note down and/or photograph all the sounds, colours and materials on the way.
Every sound (auditory observation) must be noted on a map or aerial photo of the location precisely at the place where it is heard. This creates a visual representation of sound, among other things. The layout of the representation is a matter of choice. For instance, a louder sound can be depicted larger. Or sound can be represented in onomatopoeic form.

In order to record colours (colour observation) a series of panoramic photos should be taken. These must then be developed on the computer to enlarge the pixels. This creates a literal range of colours. These colours must be named.
Finally, every material (tactile observation) should be noted down on a map or aerial photo of the location precisely at the place where it is seen. Here too, the layout is a matter of choice. For instance, materials can be represented in a photo-mosaic or in a series of materials.

1.6. Robert Smithson: A tour of the monuments of Passaïc, New Jersey

Alongside Robert Long, Robert Smithson is recognised as a pioneer of land art. He too makes use of landscape as a medium.
In his work *A tour of the monuments of Passaïc*, Smithson describes a bus journey from New York to the suburb of Passaïc, New Jersey. He summarises what he reads in a newspaper and what he sees outside on the way. For instance, after exiting the highway, the bus drives over a swing bridge that connects Rutherford and Passaïc. He photographs the bridge and gives it the label of a monument, *the Monument of Dislocated Directions*. He does the same with the machines on a construction site, sewage pipes, a car park, etc. They are all banal and sometimes offensive objects that are typical of a suburb in progress, of a place that is still too young to have a history. By promoting these objects to the status of monument, Smithson gives these non-places their own identity.

The artist writes an article as a report on the bus ride and walk. A selection of the snapshots that so appositely depict the monuments illustrates the article and visualises the action. In addition to the photos of the monuments, he shows a map of the area overlaid with a grid of lines. The distribution corresponds to the size of squares and street blocks in the suburb of Passaïc. The river meanders through the grid. The article is the work of art and appeared in *Artforum* in December 1967. The reader is invited to make the bus journey to Passaïc himself, and thus take part in the interactive art project.

A tour of the monuments of Passaïc is translated into a spatial observation method called monument observation. The student is asked to photograph all the eye-catching elements of a location with the exception of traditional monuments.
Each photo is then named. The layout is a matter of choice. For example, the photos can be made into a guide, or a travel log like Smithson's.

2. Application to design assignments

Once the six spatial observation methods have been defined, they are tested in a series of design assignments with students from the architecture and interior design courses. These exercises are carried out either in the context of the Humanities syllabus of the second-year Bachelor's degree course in Architecture/Interior Design or in the design studio element of the second-year Bachelor's degree course in Interior Design and the third-year Bachelor's degree course in Architecture. In the Humanities, students learn about research techniques. In the design studio, the students learn to design.

In the course of two years, the following five design assignments are formulated:
1. Observation of the station area and shopping complex in Hasselt. The students were asked to compare the observation methods developed with a selection of ethnographic observation techniques, such as the counting of passers-by, mapping flows of movement and the description of behaviour.
(image 1)
Example of an auditory observation. What stands out is the dominant sound of the buses.

2. Observation of a complex of squares in the city of Hasselt. The students were asked to compare the observation methods developed with a selection of urban planning analysis techniques such as a description of the current functions, building types, traffic, green space, etc. (image 2)

3. Observation of an empty shop premises in Hasselt. The observations served as a basis for designing a new use for the premises.
(image 3)

4. Observation of shopping streets in the centre of Antwerp. The observations served as a basis for designing a new shop. (image 4)

5. Observation of a building site in Genk. The observations served as a basis for designing a series of social houses.
(image 5-6)

The assignments varied greatly in scale, from a station area to a shop. This variation illustrates that not every observation method can be used on every scale. For example, an auditory observation is less relevant in a small space than in a big square. In addition, the variation resulted in a major difference in forms of representation. This meant the observation methods could be adapted after each assignment.

3. Results and evaluation

What follows is a summary of the results of the student assignments. During the process the observation methods were continuously adapted and re-tested on the basis of these results.

To be able to translate the experience of a location into an identity concept, we decided to combine various observation methods for each location. On one occasion the wonder of the first discovery and the holistic multi-sensory experience were emphasised. This allows more room for the spontaneous ability to make observations and subjective associations. Then we dissected the experience into separate sensory observations. The advantage of this is that these impressions can be explicitly noted and presented as images. This focus means that phenomena which would otherwise go unnoticed now rise to the surface. It is important that the results of the observation methods used are compared and contrasted, with a view to finding patterns and concentrations so as to establish precisely what it is that gives the location its unique identity.

The observation methods turned out to be time-consuming but useful. The added value derives precisely from the frequent observation of a location, obtained by staying there longer, at different times of the day, week and year. By presenting the observations graphically and in pictures, it is easier to compare and communicate about it in a design team.

The conceptual development can be carried out in many different ways and is still too limited in this research. This is an area for further experimentation. Examples of adjustments that can be made between the various research phases include adapting the distance at which to observe the colours, the coupling of colour and tactile observation (material), the presentation of the observations on the same map, and the focused observation that concentrates on controversial elements instead of street furniture. This last requires a critical interpretation of the location.

We are aiming for an objective implementation of these observation methods, because students are sometimes led by personal preferences and aversions. This has a disruptive effect except in the initial observations. This is largely resolved by giving a detailed description of how each observation must be carried out. For instance, the various observations must be made according to exactly the same set route, and for the colour observation the positions from where a panorama is to be photographed must be established beforehand.

These observation methods could be integrated into the design process even more. Our experiments were not originally coupled to a design assignment, but ultimately they were. In the second case, students are sometimes hesitant. It would be interesting to investigate why. More examples of alternative observation methods drawn from architectural practice will motivate them to engage more in exploring the location.

The more adept a person is at alternative observation methods, the less strictly the assignment has to be formulated. The student is then freer to determine what sort of observations are of interest for a specific location and which images will best represent them.

Notes

[1] For examples, see www.urbandailylife.com.
[2] 'Manifeste/Définitions' in "*Internationale Situationniste*", 1960.

References

Andreotti, L., *Le grand jeu à venir. Textes situationnistes sur la ville*, Editions de la Villette, Paris, 2007.

Baier, F. X., Der Raum. *Prolegomena zu einer Architektur des gelebten Raumes*, Walther König, Köln, 2000.

Careri, F., Walkscapes: *Walking as an Aesthetic Practice*. Gustavo Gili, Barcelona, 2001.

Cuyvers, W., *Traces of autism*. Report September 2006. archived.janvaneyck.nl

Heynen, H., *Architectuur en kritiek van de moderniteit*, Sun, Nijmegen, 2001.

Long, R., *A walk across England. A Walk of 382 Miles in 11 Days from the West Coast to the East Coast of England*. Thames & Hudson, London, 1997.

Long, R., *Heaven and Earth*, Tate, London, 2009.

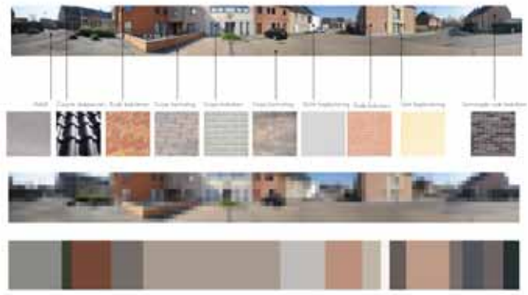
Otten, R., *Extracting Dubai*. Photographer Reineke Otten talks about the magic and art of streetology, in "Reineke Otten newsletter", Spring '09, 2009.

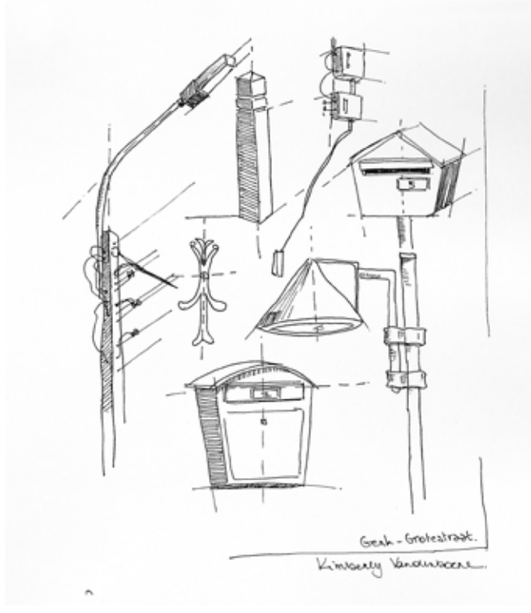
Pallasmaa, J., *The eyes of the skin. Architecture and the senses*. John Wiley & Sons, Chichester, 2005.

Peeters, K. & Vanhole, K., *Bellevue/Schoonzicht, of de nieuwe kunst van het wandelen*. Meulenhoff, Amsterdam, 1997.

Smithson, R., *The collected writings*, University of California Press, Berkeley,1996.

Thissen, F., De Roo, N. & Linseele, W., *Leefbaarheid in de dorpen van West-Vlaanderen*, in "Ruimte en Planning", 21(4), 2001.





Pasquale Miano - Giorgia Aquilar
Universita' di Napoli " Federico II " , Italy

Teaching as Research: Vomero, Storkterrein and Other Places

Didactics and Urban Transformations

The events of transformation of some great Italian cities suggest an interesting re-reading of those changing vicissitudes, on the basis of design experimentations in the "laboratories of composition" of the schools of architecture. It would be definitely an interesting and significant cross-section: the issues assigned in the schools often faced with problems debated in the city at that time, and in some cases they were directly related to concrete ongoing experiences, even through diverse forms of collaboration between universities and public institutions. In other ways, perhaps through more winding paths, the design experimentations, autonomously developed in composition courses, have identified some urban themes and projects, on which cities have later set a more operative work. Many didactical projects have been re-opened in the cities after years, and the interpretation of some urban issues have become a shared ground.

It is not always possible to think about these correspondences, between didactics exercises and urban transformations, as a proper applied research, as a disciplinary focus aimed at experimentation and actual implementation. This sight on the city is not the only possible way to develop research issues, starting from didactics. But it is evident that the reachness of responses to specific urban themes, deriving from teaching, is a matter of great interest but of few studies, which may help to explain urban aspects and problems, usually underestimated or even ignored. On the other hand, now they are long term processes, as proper traditions inside the vicissitudes of some Italian cities. This long-term consuetude only recently has come into a crisis: in the Italian contexts, the ability to debate on the city itself and its possible transformations, has weakened. Though absurdly, this process coincided with the attempt, just from the schools of architecture, to wade towards urban issues, multiplying didactical-experimental opportunities directly related to urban themes. Again, in recent years in the Italian schools of architecture very significant changes have happened, since with the latest reforms, educational forms of "laboratories", semesteral courses, degree theses with a limited number of credits, internships, etc., have been introduced.
Even in the new "formulas" of teaching, it is certainly possible the deepening of urban design issues: probably the new didactic forms themselves require new applied research contents, related to urban transformations.

The Choice of Theme

The new didactics requires well-structured responses: the various "laboratories", internships, degree theses, may give rise to different ways to face composition issues at the architectural and urban scale, that is to say something very different from the "traditional" projects of a degree thesis or of a composition design course. This change gives a very important opportunity: to work on different urban issues, with diverse techniques, and also, through coordination forms, to study an urban context. The work, focused on a specific urban theme, reveals its relevance especially when it reflects recurrent conditions commonly found in wider urban areas, whose perimeter is an unknown datum to be discovered precisely through the development of compositional-design solution. In other words, we can say that the new teaching makes it possible to "specialize the themes" (Spirito, 2011), and this is very important in urban terms.

In the new didactic work, the choice of the topic is crucial, but this does not necessarily mean that you should work on issues "on the agenda", to address the specific mechanisms of urban transformation. Certainly, the theme might fit with the site of a competition and, because of the vagueness which frequently characterizes the calls for entries, its development could clarify many issues not adequately specified yet. But, precisely for these reasons, starting from a competition call could bring away instead of nearing to the issues to be faced.
Therefore, it is clear that it is not simply necessary to frame the project area, chosen as the theme in a context to understand its interrelationships, but to consider urban and morphological aspects to get involved directly in the composition, as for the location, nature, and many further variables, to derive innovative interpretations of a wider whole. In other respects, this means to put "the problem" well-positioned, and find "many" possible right solutions about it.

In this perspective, in educational experimentation is often counterproductive to introduce a plano-volumetric design, based on which each student develops his own solution of an excessive programmatic-functional specification, since these aspects eventually overlap with the places and project areas, counteracting a full and thorough understanding.
On the other hand, even in the real processes of city transformations, the preliminary identification of the project area and themes is often necessary and, only after that, it is possible to define the functional and quantitative choices. On this aspect it is very important an intensive training for future architects.

In this regard, it is interesting to recall Zumthor's words, when he claims: "At the beginning of the design process, the image is usually incomplete. So we try repeteadly to re-articulate and clarify our theme, to add the missing parts to our imagined picture. Or, to put it another way: we design. The concrete, sensuous quality of our inner image helps us here. It helps us not to get lost in arid, abstract theoretical assumptions; it helps us not to lose track of the concrete qualities of architecture. It helps us not to fall in love with the graphic quality of our drawings and to confuse it with real architectural quality" (Zumthor, 2006).

The Definition of the Procedure

"This is the very starting point for the construction of the method: the knowledge of the theme. A long and difficult process that leads to land almost always unrelated to architecture, a slow and labored procedure of concentration on the 'value' of what is built. (...) Even if the starting point is analytic, there is certainly an act of responsibility in 'disclosing' such value, knowing that the aim of the building is its recognition" (Monestiroli, 2002).
In the definition of the procedure, it is relevant to build a first synthetic configuration within the development of the compositional design work. The comparison of the proposals of several students in a laboratory, gives the possibility to trigger some very important mechanisms: on the one hand the recognition of some shared characteristic data; on the other hand the research for further exceptional and unique aspects, staking on them for an individual and original solution. In this regard, it is interesting to return to the distinction introduced by Gardella: "The experience of practicing in the school can not and should not repeat identically the experience of practicing in apprenticeship workshops. In the workshop, meant as the professional activity, the purpose is the project, or better the work in its final synthesis, reached through a path that can also be deeply turbulent, but does not admit didactic lingerings. Instead, in the tutorial of schools what matters is not the project itself, as the final graphic paper, but how to externalize, precisely through those critical hesitations, the creative process, in the various problematics, in the long and complex chain of investigations, evidences, attempts, in the arduous search for intimate correspondences that precede it and through which, exclusively, it is accomplished" (Gardella, 1956).

In the construction of the procedure it is necessary to consider the presence of a component in the approach to the topic, which is absolutely empirical and inductive: the on-the-spot investigation, which extends in the "ex-tempore" test in the classroom, is the starting point, the exploration of each student capabilities to measure, through a few data and concisely, with a project area, making transformation proposals, outlining, at the same time, the first traces of a program and of a new configuration.

At this point, the compositional work continues by binding to the specificity of the project-area, and bringing into play all that is traced in the area, from orography to existing buildings, intended as materials, not necessarily stable, of the composition, in a continuous contamination between open and closed places, both existing and new. This way it is possible to search for new solutions also from the typological and functional point of view, renouncing to the introduction of a single and rigid function or of a predetermined building typology. Like the plano-volumetric, these aspects may represent a result of didactic experimentation and certainly not a prerequisite.
Through this approach, there is a tendency for the construction of articulated and open spatial systems, not necessarily finite, and able to penetrate within wider urban contexts, developing projects which are completed, recognizable, but also "continuable", by crossing their own borders.
Actually, each composition laboratory must be designed with an autonomous development, which certainly can be described and recounted in retrospect, but its mechanism of formation is inevitably similar to a book, to a research, to a project, in which not all may initially be envisioned.

This process may be meant in the sense masterfully indicated by Rogers, when he speaks about the work of BBPR: "Outside a methodological approach, the only way is the dogmatism laying down a priori forms, dissociated from any relation issue with other architectural components; or, a kind of hedonistic aesthetic that certainly breaks the banks of dogmas, but also shatters the unity of problems, to consider the phenomena from the arbitrary point of view of the taste. (...) I already said that our method is trying to grasp the deepest reality and translate it into poetic acts: therefore, every incentive to become more explicit with others, could help us to increase our architecture" (Rogers, 1997).

The question of interdisciplinarity

In the definition of the procedure, different aspects come into play, related to the intersection of compositional aspects with other disciplines, requiring the experimental definition of a construction process of the project.
The interdisciplinary characters emerge with a particular clarity in such experiences as the "synthesis design-laboratory" of the fifth year, configuring it as an experimentation in which different disciplines can define the various stages of the project, through their interweaving.

The need to make use of multiple contents and variables in the design, in a continuous exchange between specific compositional aspects and external factors, is also related to the peculiarities of the contemporary city. The dynamics of coaction of integrated disciplines introduce elements of contradiction, by renewing the themes, shifting some aspects of the setting and bringing out additional compositional issues, up to then being overlooked or not taken into proper consideration. As a result an increased ability to control the project and a challenge on the responsibility come out, requiring a closer approach to reality.
In this regard, Franco Purini affirms: "It would certainly be wrong to suggest that the analysis is not essential, but it is equally wrong to assume that the analytic moment is separate from the concept phase, and that it must precede the ideation, with its mythologized and often complicated procedure" (Purini, 2000).
The role of interdisciplinarity is closely related to the contribution of knowledge given by the project, in terms of comprehension and interpretation of reality. Issues relating to the project as a vehicle for knowledge are strictly interweaved with the research for a deeper and more aware interdisciplinarity of the project.

Furthermore, the project is a means to establish a continuous comparison between different positions and theoretical issues belonging to the architectural debate and their interpretation and re-interpretation related to the specificity of contexts and places.
Through the decisive contribution of the different integrated disciplines, the concept of the "laboratory of architectural composition" itself can be continuously updated and reinterpreted.
The specific experience: Vomero and Storkterrein

These considerations introduce the didactic work held at the Faculty of Architecture in Naples from 2007 to 2010 . In this work, the Vomero district in Naples and the Storkterrein industrial area in Amsterdam represent the two major areas of experimentation, from time to time investigated through design surveys on specific issues. They open new perspectives of reading those areas, in which the tension towards the urban renewal seems to be lost, because of a series of variable circumstances. The area of Vomero apparently seems not to require immediate action. In order to induce a change of "mentality", it is important to consider the need to introduce "contemporaneity" in the architectural transformations of this part of the city, which is incredibly lacking of it. At Storkterrein a series of different planning logics have been applied, ranging from those concerning redundant productive and industrial cycles to more recent services-oriented policies, reflected in the diverse interventions proposed for the area, focused on a high level of density and space utilization. At the same time further interesting design problems can be identified quite easily: the characterisation of the margins, the correlation with contiguous urban zones, the break down and diversification of the new and existing elements.

The common aspect faced in the different design courses and dissertations is in the specificity of the new architectonic and urban spaces designed, which assume the double task of reading the peculiarities and stratifications of a context, exalt its physical and immaterial tensions, and bring to light some of its potentialities on one hand, and at the same time to determine new proportions that can generate situations susceptible to further design-transformative developments, on the other hand.
In each design project, the interweaving of the specific solution for a single area and the design interpretation of the whole district has delineated a very interesting relational mechanism. This aspect is also the result of the "chronological" inversion applied in the organisation of the laboratory: work was first done on the composition, based on an inductive approach, then solutions were found on the urban scale, continuously modifying and integrating the initial solutions. In many cases the urban composition issues, emerging from the approach to a single piece of architecture, have been brought back to the local district and the city. It is the case of the reconnection of interstitial spaces, of the systematisation of resultant areas, deriving from the rigidity of the grid geometries, superimposed on the pre-existing fabric and orography, generating several unresolved points in the urban tissue.

This reconnection has been interpreted in two different ways: working to establish a system of specific interventions, defined as focal points of reference for a new reading of the district, or else trying to define a continuous diffuse connection, a "red line", a "green belt", an element of continuity. In both these interpretations an overlapping mechanism is triggered, tending to bring out untapped design potential in an area often too simplistically identified with its urban grid. Even within the sphere of the definition of new connections, strategic areas have been pinpointed. Thanks to their position, history, their typo-morphological identity, they have been able to create relations among the various strata that make up the district, its ground space, and the intersections.

The Themes and Techniques of Urban Design

In this didactic work, considerations on the changing city emerged by thinking on the key issues of contemporary urban design, such as the levels of autonomy of a design solution, the mechanisms of spatial and temporal continuity achieveble in the modification of a city part, the modes and construction elements of a strategy of urban transformation. On the latter point, the comparison between the solutions found in different situations highlights the different interpretations of the texture of urban connections: an apparent or hidden skeleton, built of a superimposition of layers, agglomerations, bands, breaks and gaps.

In this perspective, some urban elements, clearly defined by the typological point of view, may become even more, as in the case of the Vomero market from time to time becoming a crossing, infrastructure, central place. Despite the heterogeneous character of those terms, they represent specific factors of identification of thematic areas of urban design, in which architectural aspects are interweaved with strategic variables. The major compositional themes are: the intersection of different "planes of arrangement", the fragmentation into multiple directions, convergences and folds, and the breaking down through the work of excavation and the diversification of levels. In these projects, the market follows specific urban directions, generating articulated pathways which are often located at different levels: this way, the old theme of the urban "gallery" finds a more current interpretation.
Two of the themes that characterized the work on the Vomero market, have emerged also in the case of Storkterrein, in

different forms and through diverse interpretations: the urban infrastructure-connection and the crossing.
Ultimately, also at Storkterrein, the study has been focused on the problem of the reconfiguration of an area, in which the dialectic between complete and incomplete, natural and artificial, continuity and discontinuity is very interesting. In this situation, the aim was not simply to define the master-plan and then, through a linear sequence of successive stages, to identify the individual elements, but to give content to the master-plan itself through architectural ideas on the issues emerging from the area: the relation with water and the water channels, the comparision with the size of these elements, the evolution of the urban block from "closed" to "open" housing, up to new ways of defining urban spaces, the form of infrastructure, meant as a technique form tending to become architectural form, by renewing itself.

Further crucial issues, which characterize the various design studies, have been indentified: the question of density, the matters of urban superimpositions, and the relations between natural and artificial dimensions.
The re-reading of density means to rethink the configuration of the area, bringing into play a mechanism of additions and subtractions. The work on a system of overlapping is part of the same action of reconfiguration of the area, characterized by stratifications and still suitable to receive further layers. Finally, the introduction of an "artificial nature" is a crucial theme in the researchs on the contemporary city, and a theme of great interest at different architectural scales.
A very meaningful outline of the intervention techniques, to face the issues of transformation of revealing parts of the contemporary city, comes out. As for these techniques, the experimentation, even in the field of didactics, may be deeply useful to suggest specific considerations, with significant degrees of generality.

This paper refers to the didactic work held within the Magistral Degree Course
(five years degree of the European Union), in the Synthesis Laboratory of the 5th year (2007-08), Laboraory of Composition of the 4th year (2008-09, 2009-10), Intership of the 5th year (2007-08), and in the degree thesis.

Bibliography

Gardella I., *Scuola di architettura e corsi di composizione. Discorso inaugurale dell'anno 1955-56*, in «Annuari IUAV», Venezia, 1956.

Miano P., *Vomero, Storkterrein e altri luoghi. Il progetto didattico come ricerca*, Clean, Napoli, 2011.

Monestiroli A., *La metopa e il triglifo. Nove lezioni di architettura*, Laterza, Roma, 2002.

Purini F., *Comporre l'architettura*, Laterza, Roma-Bari, 2000.

Rogers E.N., *Esperienza dell'architettura*, Skira, Milano, 1997.

Spirito F., *Forme per la didattica e didattica come forma per la ricerca, in Miano P., Vomero, Storkterrein e altri luoghi. Il progetto didattico come ricerca*, Clean, Napoli, 2011.

Zumthor P., *Teaching architecture, learning architecture*, in ID *Thinking architecture*, Birkhäuser, Basel, 2006.

Legenda

(miano_pasquale_aquilar_giorgia1.jpg)
1. The Vomero Market, Naples (photograph by the authors)

(miano_pasquale_aquilar_giorgia2.jpg)
2. The industrial area of Storkterrein, Amsterdam (photograph by the authors)

Ulrike Passe - Robert Demel
Iowa State University, IA, USA

Performance and Form: new pedagogical approaches to designing the building envelope as an adaptive interface

Introduction
Architecture pedagogy plays a significant role in building a sustainable world. Sustainable design requires a thorough understanding of building energy performance, while the urging issue of a changing climate demands for higher energy efficiency and improved energy conservation. This demand challenges conventional ways to program buildings as well as purely formal approaches to the design of their envelope and spatial composition. It is no longer the question to build for one climate instead with the lifespan of a building, design concepts might need to integrate the ability to adapt to at least two climate conditions: current and future. The question is how to educate students to creatively address those challenges, when especially natural ventilation and day-lighting are complex and dynamic phenomena. Architects in general need to be better equipped during the early design phase with knowledge and design tools to integrate and predict dynamic performances of light and air movement to achieve these sustainable high performance buildings.

The 2011 experimental summer design program ars Berlin of the Beuth Hochschule Berlin was developed between Iowa State University and Beuth Hochschule Berlin with the goal to introduce dynamic performance evaluation software tools into the conceptual design phase. The design projects were based on a pre-existing master plan for an inner urban brown-field rehabilitation site and aimed to develop strategies for adaptable flexible mixed-use building typologies focusing on the building envelope as an interface for light, radiation and air. The strategies established an elevated understanding of energy performance in the urban context and visualized the specific energy flow patterns for wind, light and radiation as they are dynamically shaped and manipulated in dense urban contexts.

While the Modern Movement at the start of the twentieth century postulated lower density for urban agglomerations through 'Light Sun Air', the conceptual design results of this workshop, revealed the potential for novel urban building typologies based on the traditional European city block. Teams built of students and young professionals from three countries (Germany, USA and Italy) worked first time with energy modeling and dynamic daylight simulation software as design tools and integrated quantitative and qualitative day-lighting, illumination and shading strategies as performance parameters into their designs, which they presented in thoughtful analytical iterations with the goal to advance parametric modeling and design skills in the ability to develop a typology and evaluate its performance. While understanding and interpreting public space, circulation and infrastructure issues on the urban level the internal structure and organization of the building added to its complexity.

The proposed building blocks thus developed as part of the boundaries to urban public space while the architectural form and its inside to outside interface derives from the performance predictions as well as spatial considerations striving for a sustainable transformation of the city, which can cope with the expected warming of the Northern European city climate.

Sustainable design is integrative design
This interdisciplinary program developed as collaboration between multiple architecture schools and interested practitioners from the Siena-Grossetto regions to address the triple bottom line of sustainable design (Social, Economic and Environmental) in a five week intensive workshop. As often rightly claimed and understood by the community, sustainable design pedagogy needs to address an integrated approach to energy, health and the operational performance of buildings in order to develop inherent design strategies to transform cities into low carbon economies. The major design goal is clear: getting towards net zero carbon and net zero energy consumption over the course of the year. What is less clear is that architects and engineers need not design with climate data from the past, but for the changing climate of the next 50 to 100 years, if current scientific evidence would be taken as serious as it should. In this particular summer of 2011, emphasis was placed on performance and optimization as form-givers in an urban context. Thus the workshop set out to optimize building orientation in relationship to solar geometry, solar heat gain and radiation challenges and dynamic shading potentials. In order to achieve these goals, quantitative and qualitative design and evaluation tools were integrated in the design process in five distinct workshops with specific goals and learning outcomes.

Challenges of a Changing Climate to Architecture
Because of its dominant factor to mitigate climate change, energy is often considered the most urgent sustainability issue, but adaptability to climate change and thus to enable a building to operate successfully under various climate change scenarios is as crucial (Mumovic and Santamouris 2009). Understanding and interpreting public space, circulation and infrastructure on the urban level as well as structure and organization of the building itself add to the complexity. A combined integration of these parameters add new challenges to the programming of buildings and their envelope. The urban building is thus understood at the same time as an object in and of itself, a comfortable habitat and as part of the boundary of urban space. As Stephane Hallegatte (2006), a French meteorologist outlined; it is no longer the question to build for one climate instead with the predicted lifespan of a building its design concept needs to integrate the ability to adapt. Hallegatte's team at the *Centre International de Recherche sur l'Environnement et le Développement (CIRED)* developed analog maps as communication tools, where major European cities are located at locations, which currently have the climate, those cities might encounter in the future. In these maps, Berlin is located in central Italy close to Rome. Although Hallegatte and his colleagues caution, that climate change adaptation cannot yet fully rely on climate change predictions, this analogy highlights the need to think differently about design and prepare buildings for at least two climate conditions: current and future. One approach would be to transfer the regional knowledge of the building typologies from Italy to Berlin, with the understanding that solar geometry of Berlin needs to be taken into consideration. Another approach evaluated in this paper will be a dynamic adaptive envelope strategy developed with analytical tools, which allow the rapid dynamic development of a multitude of variations.

New parameters - New tools
Berlin's climate is currently characterized as humid continental according to the Koeppen climate classification system with distinct seasons ranging from cold winters to warm to sometimes humid summers with chilly or mild springs and autumns (summer averages range around 22–25°C (72–77 °F) and lows of 12–14 °C (54–57 °F). Winters are relatively cold with average high temperatures of 3 °C (37°F) and lows of -2 to 0 °C (28 to 32 °F). The mass of buildings certainly create a microclimate with approx 4 degrees Celsius warmer temperatures throughout the year than the surrounding rural Brandenburg (http://en.wikipedia.org/wiki/Berlin). The latitude of 52 degree provides very distinct solar geometries, which are certainly unfamiliar to US American students, who are use to sun paths of approx. 40 degree latitude. As Hallegatte's climate maps place Berlin in vicinity to Rome, Italy Rome's climate needs to be investigated. Rome is currently experiencing a Mediterranean climate (Köppen climate classification: Csa). The average temperatures are much higher with averages often exceeding 30 °C (86 °F) and summer lasts for about 6 month. While Berlin is still a heating dominated climate, Rome is definitely a climate where cooling loads in summer have to be avoided at all costs. Therefore the workshop set out to develop adaptive building envelope strategies to reduce cooling load by solar radiation to a minimum, while still enabling occasional winter gains and maximizing daylight harvesting to avoid artificial illumination during daylight hours and to counteract the shorter winter days. These parameters were investigated in detail by exploring Berlin's solar radiation potential in response to the dense urban fabric and the necessity to develop seasonal adaptive shading strategies to develop resilience against a warming climate, while still providing energy efficiency and comfort today.

Nearly all participants had to be introduced to energy and environmental modeling and simulation tools like Autodesk Vasari and Ecotect, which are currently not yet common in most design studio pedagogies. In an initial attempt to understand the impact of solar radiation on daylighting and potential energy consumption, solar geometry and Berlin climate data were studied with respect to the typological sections and diagrams of the city fabric in the newly built inner city quarter in Mitte (*Suedliche Friedrichstadt*). Some teams took the initiative to compare them with sectional relationships of Italian and Spanish urban fabric. Various time steps per day over the course of a year were used as basis for shading and basic daylight studies to understand solar radiation in the context of the urban street cannon and how their proportion might be influenced by orientation and surface geometry. Abstract models and reliefs of the in-between spaces were developed and their proportions manipulated to understand their impact.

A second short atmospheric and qualitative exercise named "A day in the life of a shadow" provided the conceptual formal driver for most designs, which followed. The goal of this exercise was to develop a strategic and typological proposal for a space between a person, the city and the sun and resulted in the development of a variety of distinct shading device. Sectional sequences and a set of hand crafted models and videos were the formal outcome. Additionally the student teams started to grasp the complexity of dynamic strategies.

Typology of the block: Flexibility beyond function
Understanding the contemporary and historic urban typology of Berlin started with the analysis of the Berlin's urban street canyon proportions and provided the basis for the evaluation of the new European Energy Forum (EUREF) master plan with respect to its potential for providing minimum heat gain and maximum daylight harvesting. Berlin's building typology developed about hundred and fifty years ago based on rapid economic growth due to industrialization and population growth. Most buildings had standardized floor plans with standardized openings and façade ornamentation was applied from pattern books and best practices. Structural and spatial typology was developed out of economic necessity with minimum structural members where large wooden beams span from the façade to a central wall and to the back façade with lateral bracing provided by the stair core. Although this outcome might not have been planned from the outset, Still today this strategy proves to be resilient to programmatic changes as it is able to accommodate multiple shades of live- work scenarios and adapted well to changing needs and the strategy of programmatic adaptability could be well suited for sustainable standards.

As Aldo Rossi outlined in *L'architettura della città* (1982) the shape of the city depends on the building's relationship to public space. This is especially true once the original program of the building has changed multiple times as in the case of the typology of the Berlin urban block. The boundary of a building thus reflects the building's position within the urban context. The Janus-like quality of the building envelope oriented at the same time towards the inside as well as the outside, provides separation and connection and offers a unique field for explorations of the in-between.

In addition to Berlin Hamburg's new urban development, the HafenCity was studied. While Berlin's historic inner city was rebuilt on the existing street pattern after Germany's reunification, Hamburg's HafenCity developed on the tabula rasa of the former inner city harbor area. For each site visited accurate proportional relationship of street to façade to courtyard to openings to entrance to threshold were noted according to thresholds between public and private space, spatial sequences as a contemporary equivalent to the Nolli map, social and economic programming and schedule choreography, landscape features and open spaces. The underlying question was if the urban fabric was formed by solitary objects, assemblage of objects or larger blocks which jointly formed the street in order to understand, if the object creates the city or the city integrating the object? The pedagogical outcome was the ability to analysis a given urban situation in respect to solar radiation and energy mediation, which might impact the building envelope.

Strategies for dynamic interaction, dynamic sequence of 'Light Sun Air'
Christoph Reinhart et all (2006) introduced and reviewed the concept of dynamic performance metrics that capture the 'site-specific, dynamic interaction between a building, its occupants, and the surrounding climate on an annual basis' as an alternative design approach to mere static daylight factor calculations. The EUREF site in Berlin incorporated all of the above complexities therefore the team based its dynamic performance design strategy on this previous research work and introduced the student teams to DaySim and Radiance, both non-commercial research tools. In order to achieve the stated objectives of dynamic optimization design parameters included exploitation of day-lighting to reduce artificial lighting during day lit times by investigating daylight factor analysis to maximize daylight use first in winter and reduce heat gain in summer, designing a shading device for the summer which reduces the amount of solar gains and balances this to a maximum use of daylight, daylight autonomy over the course of a year as total evaluation of the overall strategy, occupancy levels, behavior and activities, as well as seasonal optimization of light transmitting surfaces for summer and winter (balance light transmission, heat gain and heat loss. Additional challenges were introduced in seasonal passive solar strategies in winter and seasonal natural ventilation strategies with impact on operability of envelope elements, time-based usage of buildings. Due to the time constraints of the workshop, heat flow by conduction was not addressed by any of the teams.

Each team analyzed the building volume given by the master plan and consecutively used the solar analysis results to modify these volumes and developed strategies for the design of an adaptive building envelope, while cross-referencing those results with analysis of the daylight availability for the interior.

Utilizing a variety of software tools (Ecotect, Radiance, Daysim, Revit, Vasari, Rhinoceros, Grasshopper, Diva) a specific workflow was developed, which started with a concept for a window or light transmitting surface for a typical space condition in the winter, when little light is available. The next step was to investigate typical conditions due to orientation and overshadowing in regard to solar radiation impinging on the building surface. The goal was to light the space sufficiently with as little window area as possible, considering high architectural quality of the space for the user. Finally the teams developed a scheme for the hottest day in summer using the information from a qualified weather tool and explored possibilities to mediate between ideal conditions for winter and summer. The final step in the work flow was to evaluate the overall approach using DaySim and within the DaySim analysis tool box the daylight autonomy (DA) and useful daylight illumination (UDI) to iteratively compare and evaluate design schemes. Based on elaborate research conducted in the field (Reinhart, 2006) the goal for each team was to achieve 75% to 80% of daylight autonomy, while reducing disturbing high illuminance daylight, which would cause glare or too high contrasts. This was the moment in the process when the different quantities of solar radiation reaching the building envelope due to its urban context offered opportunities for the composition of the building.

Urban strategies for a changing climate
Following the analysis of Berlin's urban typology the workshop took the position that flexible and adaptable structures are most resilient to climate change and social change. Therefore the teams were asked to explore program scenarios, which could be adapted to future living or working scenarios or a combination of both. The strategy is also backed by economic analysis and current practices in the HafenCity, where office space is reprogrammed to housing depending on the current demand situation according to local insight provided at our visit. The analytical topics used in the urban analysis process were also utilized in evaluating the new EUREF design proposals and noted in comprehensive diagrams to establish the building as an element of the urban fabric and the city as a social, cultural, economic and environmental construct.

The European Energy Forum (EUREF) in Berlin-Schöneberg currently under development aims to become the first net zero carbon urban neighborhood in Europe. The site was the loca

tion of Berlin's former gas works and the area is still dominated by the 60m high gasometer, which now hosts television talk shows. Following the historic connection of the site to energy issues a think tank and research platform for future energy and mobility solutions is currently emerging. The urban strategies are based on large scale blocks, while the energy strategies are focused on a climate neutral mix of onsite renewable energy resources ranging from geothermal to wind, while the architecture is nondescript, if not to say bland. The master site plan also follows other parameters apart from carbon neutrality. First of all there is the orientation of the site, which faces southeast-northwest due to the historically inscribed urban infrastructure. Secondly the site has highly contaminated soils therefore use of ground was limited, which determined the building footprints to a large degree.

The urban goal was to develop typological strategies, which challenged structural parameter of building depth, current building codes and investigated innovative modes of circulation and foremost adaptability of the envelope as interface for the changing climate and changing seasons, while the urban space could well develop into an in between space, which would be able to mediate the outside extreme climate conditions.

Form, Performance and Adaptability
In the final workshop all efforts culminated in an iterative process to optimize the building envelope performance on multiple levels by balancing solar radiation through shading strategies, day lighting and natural ventilation and by rethinking the interface between occupants, the city and its natural environment. Iterations mediated between least heat gain and maximum quality daylight from the inside out and from the outside in using daylight simulation and parametric models and a physical model of a prototype envelope component. Based on the first four workshops each team tested a set of parameters for this interface between desired interior comfort and urban exterior space applying climate data and future trends. Finally based on simulation and optimization some teams challenged the current master plan and proposed alternatives usually by morphing the envelope to reduce radiation impact.

Conclusion / Suggestion for practice
The success of this integrative workshop can be noted on multiple levels. The intercultural study abroad experience provided career shaping benefits for all of the students and insights into sustainable design pedagogy. Secondly the program furthered each participant's understanding of performance parameters as design tools, which encouraged an iterative form finding process above mere form application processes. Daylight performance is not often properly understood and distinguished from sunlight, but the iterative workflow between the two main parameters highlighted the difference, elevated concept over form and facilitated creative application of complex matter. The future of the program lies in integrating this experimental approach into a thorough evaluation of contemporary design studio teaching and the next step for the program would be to integrate spatial variations into the evaluation and go beyond established organizational diagrams.

Acknowledgements
The authors would like to thank Iowa State University, Beuth Hochschule Berlin, Ente Senese Scuola Edile (Siena) for their continuous support of the ars summer academy berlin the European Energy Forum (EUREF) for granting us access to their location and information and Buro Happold for their continued financial and logistic support of the program and the public events. The 2011 summer program would have not been possible without the backing of Professor Willi Hasselmann and Liss C. Werner's insight and contacts.

Bibliography

Architectural Energy Corporation, *Daylighting Metric Development Using Daylight Autonomy Calculations In the Sensor Placement Optimization Tool Development Report and Case Studies* Boulder, Colorado 80301, 2006.

Hausladen, G. et al., *Climate design: solutions for buildings that can do more with less technology* / Birkhäuser, Basel, Switzerland, 2005.

Kopf, S., Duong, M. H., Hallegatte, S., *Using maps of city analogues to display climate change scenarios and their uncertainty* Conference on the Human Dimensions of Global Environmental Change, Feb. 22nd 2008.

Jørgensen, M., *Integrated design - a paradigm for the design of low energy office buildings*, paper 6444 ASHRAE Winter Meeting 2011.

Hausladen, G., de Saldanha, M., Liedl, P., *Climateskin: concepts for building skins that can do more with less energy*, Birkhäuser, Basel, Boston, 2008.

Mumovic, D., Santamouris, M., *A Handbook of Sustainable Building Design & Engineering: an integrate approach to energy, health and operational performance*, Earthscan, London, 2009.

Reinhart, C.F., Mardaljevic, J., Rogers, Z., *Dynamic daylight performance metrics for sustainable building design* NRCC-48669 in: "Leukos", v. 3, no. 1, July 2006, pp. 1 – 25.

Reinhart, C.F., *Tutorial on the Use of Daysim Simulations for Sustainable Design*, Harvard University Graduate School of Design, Cambridge, MA 02138, USA.

Roaf, S. et al, *Adapting Buildings and Cities for Climate Change: A 21st century survival guide*, Architectural Press, Oxford, 2005.

Rossi, A., *The architecture of the city*, MIT Press, Cambridge, Mass., 1982.

Tschumi, B., *Questions of space: lectures on architecture*, AA publications, London, 1990.

Legenda (Image Captions)

Fig. 1: Site and Context
Fig. 1.1: Stephane Hallegatte's climate change maps (with permission)
Fig. 1.2: Aerial site photo (Google Earth)
`Fig. 1.3: European Energy Forum (EUREF) site plan (with permission)
Fig. 1.4: European Energy Forum (EUREF) urban space rendering (with permission)
Fig. 1.5: Site context (Photo: Robert Demel)

Fig. 2: Berlin Genoa Barcelona_ Analyses on the Urban Scale: Maps
Fig. 2.1: Berlin Genoa Barcelona_ Analyses on the Urban Scale (Google Earth)
Fig. 2.2: Berlin Genoa Barcelona_ Radiation and proportion analyses on the Urban Scale Nurna, Tsitiridis ws 10/1
Fig. 3: Berlin Genoa Barcelona_ Analyses on the Urban Scale: Space and Objects
Fig. 4: Form and performance: Student work for the EUREF campus:
Fig. 4.1:Suncica Jasarovic_Leonardo Brilli_Alice Rosini_Thibault Toudjui
Fig. 4.2: Jie Tian¬_Haixi Peng_ Mario Krell

Site and Context

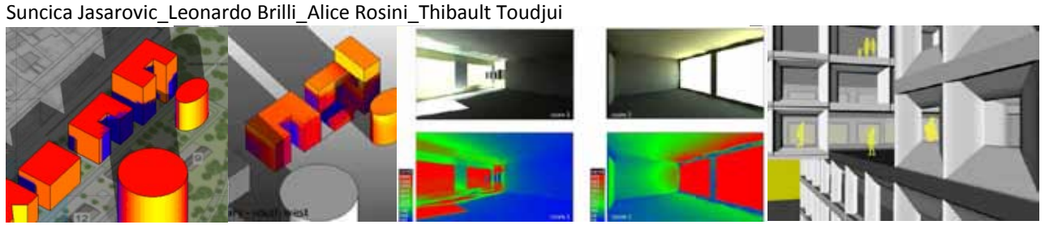
Stéphane Hallegatte Google Earth EUREF EUREF demel

Berlin Genoa Barcelona_ Analyses on the Urban Scale

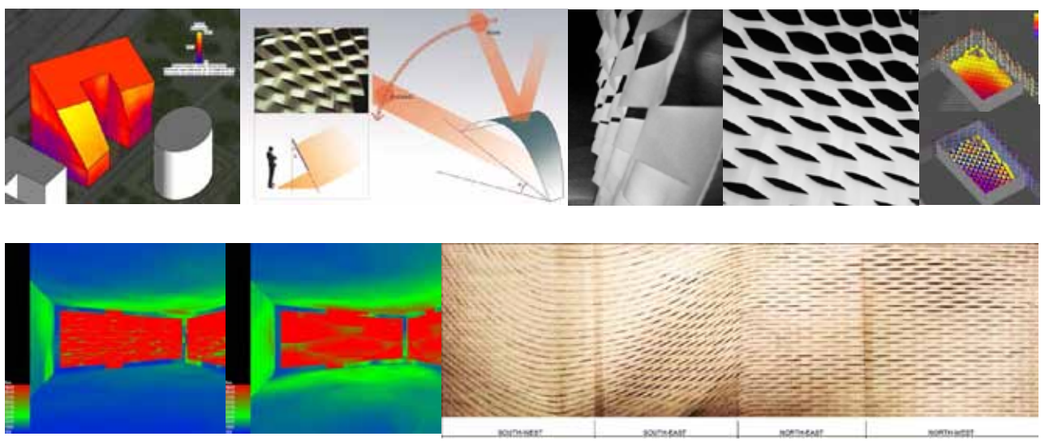
Google Earth Nurna, Tsitiridis ws 10/1

demel

Suncica Jasarovic_Leonardo Brilli_Alice Rosini_Thibault Toudjui



Jie Tian_Haixi Peng_ Mario Krell



Andrzej Piotrowski
University of Minnesota, MN, USA

New Urban Conditions: Epistemological and Pedagogical Issues[1]

As observed by such students of the postmodern condition and the processes of globalization as Edward Soja (1989) and the authors in Other Cities, Other Worlds: Urban Imaginaries in a Globalizing Age (Huyssen, 2008), contemporary cities have evolved beyond known paradigms and thus require new epistemological and pedagogical approaches. Although the modern city has always included little-known heterotopic practices (Foucault, 1986) and its evolution has long been inseparable from the forces of capitalism (Tafuri, 1976), it has also given form to unprecedented kinds of social relationships and hybrid programs (Kaijima, 2001). As interesting and dynamic as these new structures of urban living are, they have triggered professional interest as well as disciplinary confusion. Their complexity has been rarely acknowledged or fully explored because capitalism-related social and economic changes have always been accompanied by practices of denial that make them appear irrelevant or benign so as to alleviate the anxiety associated with the ubiquitous presence of the culture of consumerism. This problem is epistemological, in that it concerns the way perceptions, attitudes, knowledge, and shared assumptions are shaped. Two examples, one from Victorian England and the other from the 2010 Architectural Biennale in Venice, Italy, help explain this point.

Let us consider first the popularity of the kaleidoscope in Victorian England. Sir David Brewster, who invented the kaleidoscope in 1817, promoted it as an optical machine that would speed up the artistic invention of beautiful and precise shapes (Brewster, 1856). It is a simple instrument designed to create multiple geometrically structured reflections of random things. Within a tube of mirrors, one end is open for viewing and the other serves as a container for small loose objects such as colored glass, tinsel, or beads. Kaleidoscopic compositions consist of six or eight wedge-shaped identical parts that together form a visual disk. One of those wedges gives a view of actual objects, while the others are mere reflections of the first one repeated according to rules of symmetry. Two primary features made the kaleidoscopes popular. First, the images they created revealed a paradoxical possibility of a complex visual order made of the same elements. In this way, the "scientific toy" of the kaleidoscope promoted the appeal of self-referential relationships. Moreover, this aesthetic exercise was interactive; anybody could endlessly produce new, highly structured arrangements by simply taping on or turning the device. The second feature—essential for its cultural functioning in a world flooded by commodities—was that the pieces that created beautiful orders were completely random. In the nascent phase of consumerism, the realization that random and mass-produced things could form a new kind of order played a significant psychological function. As Thomas Richards (1990) shows, in nineteenth-century England, not only material goods but also old beliefs, arts, historical places, and events had been symbolically disintegrated and commodified.

According to Marshall Bernan (1982), the emergence of modernism has been directly dependent on such disintegration of preexisting symbolic orders. Only a world made of such fluid relationships could support the forces of the market economy. Although necessary for the progress of capitalism, this unstable worldview was difficult to accept for people used to living their lives according to fixed value systems and consistent symbolic interpretations. An aesthetic prosthesis such as the kaleidoscope could provide a place of refuge, however. Anybody playing with the kaleidoscope could bring visual integrity to otherwise unrelated things. Brewster, rather than offering a new and comprehensive philosophical system, developed a viewing device that resonated with common concerns but helped to subconsciously reduce them to the search for visual satisfaction. This new aesthetics provided a psychological comfort zone to all who were disturbed by the speed and extent of changes triggered by the commercial revolution.

As I discuss in *Architecture of Thought* (Piotrowski, 2011), the Victorians exercised this kaleidoscopic way of thinking in a variety of ways, including arrangements of physical environments. From the Great Exhibition of 1851 to the fashionable domestic spaces of the time, interiors were constructed of such self-referential design elements and connections. The progressive interior decoration ideas of the time featured a multiplicity of random objects forming relationships by the way they were arranged, frequently by establishing symmetry within a composition or by using large mirrors to imply the illusion of symmetry. Opulent rooms decorated in this way literally resembled the space and experience of the kaleidoscope. Domestic interiors thus served as training sites, places where a new breed of consumers learned how to make sense of a symbolically disintegrated world. These inhabitable comfort zones counteracted doubts about the commercial revolution, preventing critical insights into the nature, scope, and magnitude of the changes triggered by capitalism. Consequently, these novel aesthetics silenced the need for critical thinking and ultimately made understanding the forces that powered the commercial revolution irrelevant.

The world of the twenty-first century may seem quite different from that of the nineteenth century, yet one can observe striking similarities in current aesthetic practices and their cultural functioning.[2] Two exhibitions in the 2010 Architectural Biennale in Venice, Italy, provide particularly telling examples of how the resurrected Victorian practices of denial limit the knowledge of new urban environments. The first exhibition, representing France, was devoted to new urban phenomena and planning issues. Titled "Metropolis?" it was curated by architect and urban designer Dominique Perrault, who invited representatives from the five largest cities in France to "propose a reading that founds, articulates, and nourishes the genesis of the Twenty-first-century metropolis" (International Architectural Exhibition, 2010, 52). Because the Biennale's theme was "People Meet in Architecture," Perrault exercised a seemingly rational approach when he focused on and analyzed the void in the city as "the most lived-in space." The exhibition was large, meticulously arranged, and choreographed to attract many, especially young, visitors.

As seen in Figure 1, it was a multimedia installation in which the viewers' attention was drawn primarily to sequences of back-projected still images related to a particular city or its issue. These pictures, accompanied by sounds of the city, ranged from photographs of people, buildings, and public spaces to images of measured drawings, sketches, and diagrams.
The intentions of the exhibition went far beyond providing a well-illustrated knowledge of urban issues, however. Although the cinematic montage of images and sound was not particularly helpful in conveying precise information, its measured degree of confusion was very successful in creating visual appeal. Figure 1 illustrates how this was done. The back-projected pictures were accompanied by equally large mirrors, each at the edge of and perpendicular to the screen, and as a result, even measured drawings were duplicated in reverse. The map shown in Figure 1 is confusing as a record of information, but it makes a fascinating composition. All of the diagrams or analytical drawings showing planning ideas thereby also appeared as semi-organic and evocative forms. Such a huge symmetrical figure silenced the need to decode the map as a map and made its sheer appearance intriguing. Altogether, it was as if the spectrum of issues presented by the exhibition was defined and delivered in a conventional, semi-scientific way, while the visual appeal of the aesthetic phenomenon was constructed in a manner unrelated to the subject. Pure information seemed insufficient to make its intended case, and could draw and hold the interest of the crowds only when delivered in the kaleidoscopic way.

As if playing with already abstracted forms of technical drawings was not enough, the exhibition's designers also used intentionally random photographs showing fragments of the city or views involving out-of-focus or moving elements, night shots, and images saturated with the colors of clothes or artificial lights. Frequently, by mirroring even completely arbitrary details of dilapidated environments such as junkyards, the designers created strongly evocative compositions. And it is telling that still images, not movies, worked best to turn the complexity of a contemporary city into a spectacle of self-referential replication, as still pictures presented slowly and deliberately disjunctive impressions as well as familiar appearances. In this way, the spectacle benefited from the similarity between the urban fabric and the world of commodities: both produce a fragmented worldview in which visual appeal plays a crucial role. Designers of the exhibition described their installation as one "in which screens and mirrors, in an unceasing dialog, create a striking multiplying effect of images, enhanced by background sounds comprised of metropolitan noises." Equating this contrived aesthetic experience with making sense of difficult urban issues, they described it as "an immersion in the image, in images and sounds, a sensory experience enabling one to feel, to sense, and to grasp the full scope of the metropolis as an idea" (International Architectural Exhibition, 2010). In reality, the French exhibition created a kaleidoscopic comfort zone that exploited visitors' interest in the urban forms of late capitalism only to turn such curiosity into the search for a pleasing aesthetic experience made of self-referential replication.

Although one could say that the French exhibition used evocative methods of the nineteenth century to avoid the totalizing tendencies of modernist approaches, the Biennale also included much more didactic presentations. Andrea Branzi's "Per una Nueva Carta di Atene," for example, specifically referred to Le Corbusier's Map of Athens, the modernist precedent for urban planning. Using this "mental model" as a springboard, Branzi analyzed contemporary urban phenomena to argue for a profound paradigm shift in planning and the knowledge of urbanism (International Architectural Exhibition, 2010, 100).

Although his comments could apply to many contemporary cities, his conclusions stressed the dynamic nature of contemporary urban growth and the need for a shift away from the tradition of stable urban categories to what he terms a "weak urbanism." The new city, according to Branzi, "must be constantly 'rethought, readapted, and replanned,' in search of temporary balances," thus equating the insufficiency of old research methods and models to the impossibility of planning a market economy. Branzi's attempt to systematically organize these difficult issues produced a list of ten recommendations, each asking the reader to "consider" a particular way of thinking about urban complexities and operating not only as themed metaphors comparing contemporary urban environments to "high-tech favelas," using a personal computer, a "genetic laboratory," or "micro credit," but also suggesting the order of the cosmos or the growth of living microorganisms (International Architectural Exhibition, 2010). Although these descriptive narratives generated many insightful observations about new urban conditions, Branzi's visual illustrations operated in a radically different way that, like the French exhibition, exploited the kaleidoscopic way of thinking. The exhibition consisted of a room with numerous small windows installed in the walls, each providing a view into a box lined with mirrors and containing various objects. Some of these displays had been constructed many years ago and others were more recent, but they all performed in the same way. The display containers included models of parks, urban agriculture, abstracted planning ideas, and even elements of figurative symbolism. In Figure 2, for instance, rows of common commercial packaging are used to create an impression of a cityscape. The ground is translucent and lit from below. Graphically delineated streets as well as miniature people and cars prompt an overt association with an urban environment.

Similarly to the way kaleidoscopes are constructed, this composition is lit from the side where random objects are located and their colors and shapes are multiplied by mirrors. In this case, however, the symbolic function of the kaleidoscope is recalled in ways exceeding its optical effects. Not only does the vivid signage of the cardboard boxes visually resemble pieces of colored tinsel or glass, these objects literally exemplify the fragmented world of commodities. More explicitly than Brewster or Perrault, Branzi has engaged with the world of commercial branding as an essential component of any contemporary urban environment. Yet the irony of this approach loses its ability to generate a critical reflection as soon as the composition is replicated in a kaleidoscopic manner. The city model made of commercial components seems ordered and vibrant, almost enchanting visually, but in exactly this way buries important critical issues in the play of nostalgic or entertaining spectacles of replication.
All the displays designed by Branzi created an impression of visual integrity reaching into infinity, triggering interest and keeping visitors moving from one box to another in search for never-ending kaleidoscopic pleasure. Just as Victorians needed an aesthetic practice to accept the disjunctive and conflicted world of commodities, visitors to the Biennale seemed to appreciate these visual constructions that turned difficult contemporary issues into pleasing visual effects. A mode of thought that had disarmed the discomfort of the unstable world in the nineteenth century was now being revisited to produce visual connections, such as those in the 2010 Biennale, that create a superficial impression of relationships where in reality no substantive relationships exist.

Thus I argue that a new approach to the knowledge of new urban phenomena is needed, one that would identify and explore the tacit forces transforming postmodern urbanism.
Only by avoiding practices of epistemological denial and without any nostalgia for old solutions can designers conceptually and critically engage both the positive and negative aspects of the new urban tendencies. I believe that architectural education provides the best opportunity to do this, as mental habits of instant ocular gratification and finding pleasure in self-referential arrangements can be best counteracted by competent knowledge and critical thinking. To substantiate this assertion, I would like to show here an example of how a design project can conceptually engage with contemporary architectural and urban phenomena. This example is a thesis project developed in 2007, under my supervision, by Nat Madson, an architecture graduate student.[3]

Titled "both/and, architecture of conjunction," the project took advantage of the flexibility of the thesis format, which permits students to choose the scope and emphasis of their work. Madson decided to tackle an actual design commission of that time, a new headquarters for the Target Corporation, one of the largest retailers in the United States. What made this educational exercise uniquely productive was Madson's critical strategy. First, he identified a seeming paradox: while the Target Corporation prides itself in being a community-friendly corporation and while it generously supports social causes and the arts, when it needed a large new headquarters complex, it commissioned a conventional suburban development disconnected from the city. Then Madson accepted the quantitative and practical requirements of the actual commission but altered one of its fundamental assumptions by placing the Target Headquarters in North Minneapolis, an economically disadvantaged part of the city, thereby creating a new set of opportunities and challenges. Such a shift in assumptions engendered an unavoidable juxtaposition of the spatial practices of the corporate world and the reality of a dilapidated area of mixed commercial use and substandard housing. Such a conceptual confrontation is very unlikely within the framework of current planning principles that are designed to avoid these kinds of conflicts. Zoning-wise, the facility for 7,000 employees (roughly 110,000 square meters of offices) is antithetical to a site riddled with legal, social, and economic problems, not to mention the problem of expansion in the future. Yet it was exactly the tension between the well-controlled model of the corporate environment and the messy complexity of urban issues represented by the North Minneapolis site that was most productive for the understanding of forces that shape contemporary urban life and postmodern spatial practices.

Figure 3 shows two views of the project: new buildings drawn against the aerial view of the neighborhood at the top and a line drawing of the same site plan at the bottom. The image illustrates how the primary design decisions grew out of the generic nature of the office facilities and the practical requirements of the large parking space, which spans the space between and underground two existing streets. It also shows how the large scale of a new investment could attenuate the disruptive character of urban barriers, such as the highway. Intriguing as a study of the encounter between people who would be separated in the current model of city ordering, the project was most productive where it revealed opportunities for new hybrid conditions occurring in two primary ways: (1) where the imposed grid collided with existing structures worthy of keeping (especially in respect of the old diverse programs they contained), and (2) where the new design called for solutions that would physically transition between programmatically different but conceptually complementary activities. For example, a unique architectural device, called by Matson the "concourse," linked the underground parking, the public realm of the ground level, and the

corporate but potentially public facilities, including those on the elevated corporate level. Such a spatial interaction created unusual opportunities for cross-programming and unprecedented kinds of public spaces. It could be generally said that, similarly to the way Rem Koolhaas discusses New York or a concept of "bigness" in contemporary architecture (1994; 1998, 499-501), the most important conceptual discoveries of the project were triggered by the critical programming, which produced an unorthodox and hybrid urban fabric.

Unlike the Venice Biennale exhibitions, this project avoided self-referential solutions and did not attempt to create an impression of visual relationships where in reality no substantive relationships existed. To the contrary, its best ideas grew out of conflicts and the disjunctive nature of the contemporary urban conditions. When faced with conceptual conflicts, the project intentionally avoided polar either/or distinctions and considered both/and possibilities, thus proposing new kinds of spatial and social interactions. The very notion of a distinction between architecture and urbanism was subverted at the moment the investment characteristic of a homogenous suburban development was overlaid on the living fabric of the city. It was that complexity made of existing and new buildings, of programs that are highly controlled and predictable and the random activities of a living city, that made Madson's project an award-winning thesis. Unfortunately, while good as an educational exercise, this vision and strategy remain far from the planning reality in Minneapolis, as elsewhere. As it was in nineteenth-century England, the forces of capitalism operate best when they remain undetected and transparent to critical insight. Only as such can their symptoms appear aesthetically appealing and their urban consequences benign.

Figure 1. French exhibition at the 2010 Architectural Biennale.
Figure 2. Andrea Branzi's exhibition at the 2010 Architectural Biennale.
Figure 3. Plan of the Target Headquarters in North Minneapolis by Nat Madson.

Bibliography

Berman, Marshall. 1982. All That Is Solid Melts into Air: The Experience of Modernity. New York: Simon and Schuster.

Brewster, David. 1858. The Kaleidoscope, Its History, Theory and Construction with its Application to the Fine and Useful Arts. London: J. Murray.

Foucault, Michel. 1986 [1967]. "Of Other Spaces," Jay Miskowiec (tr.), Diacritics, Vol. 16, No. 1, pp. 22-27, Johns Hopkins University Press.

Huyssen, Andreas, ed. 2008. Other Cities, Other Worlds: Urban Imaginaries in a Globalizing Age. Durham, N.C.: Duke University Press.

International Architectural Exhibition. 2010. People Meet in Architecture: Biennale architettura 2010, 12, Mostra internazionale di architettura: la Biennale di Venezia. Venice: Marsilio.

Kaijima, M., Kuroda, J., & Tsukamoto, Y. 2001. Meido in Tōkyō. Tokyo: Kajima Shuppankai.

Koolhaas, Rem. 1994. Delirious New York: A Retroactive Manifesto for Manhattan. New York: Monacelli Press.

Koolhaas, Rem, Bruce Mau, Jennifer Sigler, and Hans Werlemann. 1998. S,M,L,XL. New York: Monacelli Press.

Piotrowski, Andrzej. 2011. Architecture of Thought. Minneapolis: University of Minnesota Press.

Richards, Thomas. 1990. The Commodity Culture of Victorian England: Advertising and Spectacle, 1851-1914. Stanford, Calif: Stanford University Press.

Soja, Edward W. 1989. Postmodern Geographies: The Reassertion of Space in Critical Social Theory. London: Verso.

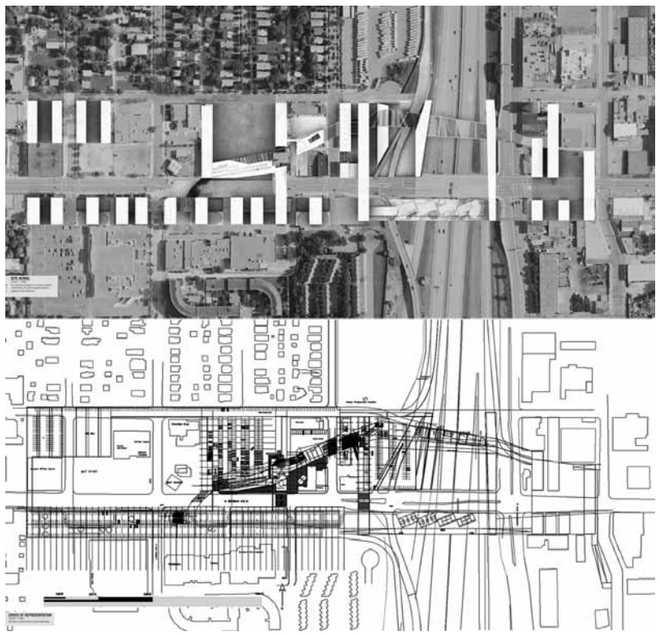
Tafuri, Manfredo. 1976. Architecture and Utopia: Design and Capitalist Development. Cambridge, Mass: MIT Press.

Notes

[1]This presentation has been supported by the Metropolitan Design Center at the University of Minnesota.

[2] Many artists and architects have directly applied Victorian techniques in their work. It is also telling that some artists, for example Kazuhiko Kawahara, have become well known by photographically turning a contemporary city into a kaleidoscopic pattern. Fillip Dujardin exploits this new interest in complexity made of the same by multiplying and montaging pictures of architecture. Even Rem Koolhaas, a critic of cultural phenomena, used this type of visual production at the beginning of his movie about contemporary Lagos, Nigeria.

[3] I was the thesis committee chair, and Professors Cynthia Jara and Jennifer Yoos served as the committee members.



Barbara Cadeddu - Valeria Piazza - Patrizia Sulis
University of Cagliari, Italy

A different approach: CastelloZINE. Tools and methodology of civil journalism applied to the urban context

The case study we propose in this paper aims to add knowledge to the current question about the capacity of traditional tools to properly read and analyse the new phenomena and ongoing transformations in the present urban domain.
The necessity to catch and build a complete and real picture of the space has led us to propose to the students a different approach, that of the civic journalism. Starting from researches on local newspapers, direct observations on the place, and a strong involvement of the citizens and the other players of Castello, the historical centre of Cagliari, the students have reached a high knowledge of the design context, and they have proposed ideas, scenarios and designs for the future development of the quarter directly from their own previous analyses. Furthermore, students have also been inner players in this process, being the faculty of Architecture a strong component of the quarter.

The CastelloZINE project is part of the academic activity of the 'Design and Society' course, composed by a design studio and a course of sociology, held at the 2nd year of the MSc in Architecture. The two subjects of the course share the same methodological approach, based on the use of social analysis tools for building new methods of interpretation of the urban domain. The course aims to start some thoughts about the transformation processes that are interesting the European contemporary city, particularly the processes arising from social practices that contribute to the everyday production of urbanity. Those latter are considered as 'designs', individual or collective ones, displayed in the space, expression of diverse ways of living and actions that continuously redefine places from a spatial, functional and symbolic point of view.

The objective of the course is to encourage the students to develop reading and interpretational skills for those urban phenomena, through the use of methods and tools borrowed from other disciplines.
Indeed, we believe that an architect has to be capable of detecting and bringing to surface the tensions and needs that shape the territory, for coherently acting in this complex and unstoppable changing process. In order to reach this goal, the course has been structured in several phases. The first one, mostly theoretical, focuses on building a knowledge framework about the contemporary urban conditions; the second one, more detailed, concentrates on the employment of new tools and research methods for developing design scenarios for the given context. Doing so, each student could test his own design approach on a real case.

Observing, understanding and describing the contemporary urban domains, being capable to catch the dynamics and the relations among the different phenomena: this is a quite complex action.

An architecture course that aims to introduce a cognitive approach to design for answering to pragmatic issues, comes up against inadequate approaches and tools. The traditional analysis models just take the physical dimension into account, not considering the relational qualities or all those self-organised elements that people arranges, and that continually change the significance of places. What concurs to the current crisis of traditional urban planning is the speed mismatch among people's needs and the time that planning requires to meet those needs. Being conscious of these limitations in deciphering the complexity and mutations of the contemporary city, it is also unlikely to define objective reading models capable of orienting the design process. Therefore, we propose instead to build and test some 'adjusting' models, based on the introduction of two fundamental principles to the spatial research process: the 'diving' principle, and the principle of circumscribing the cognitive action.
The 'diving' principle implies the direct observation of the case study, introducing the subjective point of view of the observer, usually not included in the traditional analysis. The vision moves at head height, in order to catch all those elements not visible from a zenithal view. Doing so, the 'knowledge' of the place occurs through measuring the space, understanding the shapes where people live, the relations and ways of space employment. Each student develops his own 'knowledge' of the urban context, through senses and cultural association of ideas, building a personal psychogeographic map of the space.
The principle of circumscribing the cognitive action implies a very close approach between the observer and the case study, in order to produce local maps and detect the specific urban dynamics in a precisely defined space and time. This approach also implies a straight relationship with the players of these spatial and social dynamics.

We introduce a different approach in the traditional reading process used in the educational practice of architecture courses, organising the design studio by the methods and tools of the civic journalism.
The civic journalism is a media born in the '90ies in the United States to be the voice of citizens, to make them conscious of their community problems, to encourage them to mobilise. Nowadays, due to the fast evolution of the media, the civic journalism practise is getting redefined: it suggests inquiries or produces news itself, mainly creating the conditions for promoting collaborative projects for the citizens.

The idea of organising the studio class as a journalistic editorial office composed by students-citizens is an attempt to read and catch those urban phenomena, part of the everyday life domain, that escape to the traditional analysis, and to enable real opportunities of involvement, dialogue and exchange to and among the quarter inhabitants, in order to propose design scenarios coherent to the specific needs. Therefore, the quarter magazine CastelloZINE is not just an information device, and neither is it only an educational tool. It is instead a device for a straight knowledge, defined in a precise time, capable to collect, organise and edit current living conditions, and to support actions coherent to the citizens requests.
The spatial context for experimenting with this theoretical and design approach is the quarter of Castello in Cagliari. The design themes have been defined by the students, starting from the results arisen from the analysis phase.
Castello is the main quarter of Cagliari, established on a hill in medieval age. It had been fortified by means of walls and towers, which characterise it as a withdrawn quarter. Historically, the government and aristocratic palaces were settled in Castello, identifying it to the city of Cagliari. Nowadays, its only ways of access are the medieval gates, opened to the walls that still enclose most part of the quarter, isolating it from the rest of the city.

As many other historical city centres, Castello is a quarter in decline, characterised by neglected buildings and a strong decrease of inhabitants. Consequently there is an evident physical deterioration, several businesses and hand-crafted activities have closed, delocalising the public utilities. Despite the faculty of Architecture settled in the quarter in 2008, the students cannot find suitable accommodations or proper facilities that could convert Castello into a student campus.
Those critical issues, in conjunction to the quarter potentialities, require some thoughts and answers in terms of political and design choices. The more pressing issue is the complete lacking of effective involvement of inhabitants in the strategical decisions of urban development. This lacking leads to a strong request to be listened by the citizens. The student-journalist can fill this lack, acting as an intermediary among people and authorities. Furthermore, he designs future scenarios and develops likely solutions, contributing to the good functioning of society.

Different products have been realised as outcomes of the design studio:
- CastelloZINE, a paper magazine, a descriptive device of the quarter conditions, articulated on four main topics: local news, political column, business and culture;
- CastelloZINE+, a paper supplement to the magazine, composed by several illustrated designs specifically built for answering to problematic issues strongly arisen from fieldwork analyses. The supplement is a device through which suggesting original scenarios and experimenting innovative design proposals;
- a blog that allows to share all information and receive real-time feedbacks from the different players involved in the project. The virtual square of social networks, the most dynamic media for communication, information and socialisation, becomes a place for sharing and exchanging opinions and ideas.

The course has been organised in different steps that, from the content and objectives point of view, are mostly comparable to the usual phases of urban environment analyse for scenario building. However, those steps stimulate the creative component of the design practice, trying to involve different levels in the reading and interpretation of places. During the course, the students were introduced to specific literature and guided to direct observations, in order to show them how to go beyond appearances and how to build, from a single clue, the phenomenon behind it.

We state beforehand that the educational approach proposed to the students is quite different from the other design studios. No defined space or function is assigned for the design: on the contrary, it is required to the students to propose both of them, starting from needs detected in the quarter, without any bind about design scale or strength. In order to realise that, the student have to learn again to read the reality and deduce the spatial demands from different practises and uses of the space.
To address the students to this different approach, the first theoretical lectures have focused on illustrate several unconventional methodologies and tools to detect practises and users of places through trace left in space, according to the circumstantial approach. Subsequently, as first analysis practise, a bounded research area has been assigned to each student, specifically a 5x5 mt squared area into the quarter, selected for its spatial and symbolic characteristics. The students have been absolutely free to choose tools and methods for reporting and describing the detected phenomenon. During the whole day each student has roamed the quarter streets, investigating for users trace in his own research frame.

The results have been presented in a group review and several phenomena have arisen from the researches: occupancy and privatisation of public spaces, peculiar uses and practises, generally associated to unsatisfied needs of the inhabitants. Most of the students have presented their inquiry results by photography, the most direct tool, but others have also chosen videos, sketches and sounds.

Before starting the second practical phase of the course, we have organised a series of seminars with some local professionals working in different medias (newspapers, radio, television, web). They have illustrated to the students the briefs and objectives that journalism has towards the society, the fundamental research methods of information and stories, how to structure and build an article for communicating the news in the best way. Each seminar has been an active moment of knowledge and exchange among guests and students, useful for defining their individual approach to the reading and interpretation of space. During the seminars, the students have been put to the test through exercises that have allowed them to practically understand the approach, output and tools required for the next phases. For instance, the students have been led through a writing test about crime news by a newspaper journalist. He has first explained the fundamental concepts for structuring an article, then has simulated a specific situation, as a car accident, asking the students to work out the event using the reporter methods. The group review has pointed out some difficulties about using writing as a method for reporting a phenomenon; however, it has also opened the way to learn the right approach and a set of basic rules for structuring a proper article.

During another seminar, a writer has told the students how her living experience in the quarter as an inhabitant has later become a novel. The interesting point of translating the physical space of the quarter into the literary space has been really useful to open to an expression language often ignored by architecture and urbanism fields. Being description a fundamental step of space analysis, multiplying the points of view for catching new sides of the reality has been adopted as the fundamental principle for any transformation.
Furthermore, a news photographer, guest of the last seminar, has illustrated her work to the students, highlighting the fact that even one single photograph can tell a whole story, and that photography is a fundamental part of the news. The students have been involved in a reading and synthesis test to catch and report, in a single photograph, an hidden phenomenon detected in the quarter just by spatial trace.

Afterward, the course has developed in different phases that, from a content and objectives point of view, are mostly comparable to the usual one of urban environment analyse of scenario building.
The class has been structured as a proper editorial office and the students have been divided in four groups, corresponding to the four main topics: local news, political column, business and culture. Each editorial staff has chosen a news editor, in charge of the contents, and an art director, in charge of graphics and photographs: the news editors have related each others during the meetings with the magazine editor (i.e. the lecturer), in order to have a coherent editorial policy among the four groups.

At the beginning, each student has identified a significant topic for his magazine article, starting from his own knowledge of the quarter, some researches on the local newspapers, open format interviews and information collected during the seminars. After discussing with his editor about the significance of the topic and the information sources, each 'reporter' has worked on gathering all the useful materials for his research.
Some students have concentrated on the news, making a deep research into archives and records of the local newspaper, for reconstructing and better understanding the early causes of the issues detected in the quarter. Others have focused on field work, with one-to-one or closed format interviews to personalities directly involved in the quarter issues.

In general, the involvement of the quarter inhabitants and city representatives has been wide. Some citizens have participated in the discussion during lecturers and seminars, invited by the lecturer or by some students that have chosen the social networks as research tool, getting in touch to quarter committees or single inhabitant that use the web to state their demands. Other citizens have been directly interviewed by students, as the shopkeepers of the quarter, or via email, through the committee mailing lists, or making official appointments with city representatives, as the major or councillors. In this way, citizens have been actively involved in the research and work on their quarter, and the students have highlighted a true interest in their demands.

The inhabitants willingness distinctly arises from the magazine articles: there are several descriptions of the quarter everyday life, and in general a strong confirmation of the current issues and demands of the quarter inhabitants. The magazine, as a descriptive device for research on the quarter situation, becomes the place where the opinions and ideas of inhabitants, shopkeepers and representatives are discussed, for working out on urban management models that coherently meet the demands of the quarter.

In order to spread the possible solutions to the quarter issues emerged from the analysis and collected in the magazine CastelloZINE, we have also made a supplement, CastelloZINE+, a collection of pragmatic suggestions for a 'possible Castello', pictured along with the inhabitants involvement.

The students, individually or in group, have developed some design proposals for the quarter, through design strategies, scenarios and urban management programmes. Each design is totally defined by the students themselves, about the places involved, the functions and the strength of the design, depending on the detected demands and the will to change that each student has noticed in the quarter. The supplement becomes a devise through which the students can investigate and test original solutions.

While the magazine is coherently organised, with a clear and defined structure that collects all the different points of view of the editorial offices, the supplement is instead an heterogeneous collection of proposals, each one involves different domains, gathering up and suggesting solutions to mobility issues and inhabitants ageing, to the demands of the shopkeepers and those who historically live in the quarter.

Barbara Cadeddu - Valeria Piazza - Patrizia Sulis
University of Cagliari, Italy

The objective of the entire CastelloZINE project is clear and explicit: to design, through 'not conventional' tools, a devise able to collect, critically organise and share materials usually excluded by the traditional analyses, but truly important in order to understand the actual demands of the urban domains and elaborate proper solutions for the urban development.

An important objective is also the attempt to build again a relationship among the school of Architecture and the urban territory, and put the school up for the role of intermediary among citizens and authorities. This request is particularly strong in Castello, where the student is, first and foremost, a quarter inhabitant, which tries to interpret this community conditions through new methods (civic mapping, public deliberative events), encouraging inhabitants involvement and offering the expertises of a proper design studio, permanent lab for ideas and design experimentations.

We do believe that the CastelloZINE project has a strong social value. Collecting important materials for understanding the quarter core, and involving the citizens, specially during the data collecting and analysis phase, is an explicit invite to them for talking about their life places, their issues and memories on living and sharing common spaces, and their expectations for the future.

From an educational point of view, the project potentialities lie in the incentive of putting to use diverse expertises and skills, about communication, graphics, design, logic, relationship. As a matter of fact, the design studio organisation, by defined roles and hierarchies focused on building a coherent product, is useful for testing situations similar to professional design offices or working groups for contests. In particular, the editorial board meetings, focused to organise the schedule about the magazine structure, require specific skills in order to select the information and build a hierarchy of values relative to the news importance. A peculiar engagement has been required for managing the space for all materials, since the editing work must take into account the fixed layout system, with columns, titles and subtitles, photographs, each of those elements with an assigned space. Another interesting point is offering to the students coming from outside Cagliari the possibility to inhabit Castello, encouraging an active participation in the quarter life and establishing a relationship with the places, their particular issues and the potentialities they offer.

At the end of the course, thanks to the interest aroused in the quarter about the CastelloZINE project, we have had the opportunity to publish the magazine and the supplement through a funding competition promoted by the Banco di Sardegna. We have finally presented the printed magazine during a public meeting, together with the authorities of Cagliari.

Bibliography

Albano R., *I giovani e le nuove forme di partecipazione*, Il mulino, Bologna, 2005

Baruzzi V., Baldoni A., *La democrazia s'impara: consigli dei ragazzi e altre forme di partecipazione*, Editrice La mandragora, Imola, 2003

Boeri S., and others, *USE Uncertain States of Europe*, Skira editore, Milano, 2003

Careri F., Walkscapes. *Camminare come pratica estetica*, Einaudi, Torino, 2006

Koolhaas R., (2006), *Junkspace*, Quodlibet, Macerata, 2006

Koolhaas R., *Boeri S., and others, Mutations*, Actar, Barcelona, 2001

Maistrello S., *La parte abitata della rete*, Tecniche nuove, Milano, 2007.

Negroponte N., *Being digital*, Newsday, 1996

Staglianò R., *Giornalismo 2.0*, Carocci, Milano, 2002.

Van dick J., *Sociologia dei nuovi media*, Il mulino, Bologna, 2002

ISBN 978-88-84-67-685-6

01 OZINE CASTELL

DIARIO DI QUARTIERE
LABORATORIO
PROGETTO E SOCIETÁ

CUEC

stampato con il contributo di
Fondazione Banco di Sardegna

Federica Visconti - Renato Capozzi
Universita' di Napoli " Federico II " , Italy

Between research and teaching: projects for Rione Luzzatti in Naples.

The essay describes the contents of a coordinated activity conducted in the Faculty of Architecture of Naples, involving research and teaching.[1]
The research of the Department of Urban Design and Planning on the restoration of the residential, 'modern'[2] districts of the XX century - particularly in the Naples metropolitan area but looking at the most advanced experiences in Europe - involves researchers belonging to different academic areas: Urban Planning and Law, Technology, Architectural Design, History and so on.
The contribution of researchers and teachers in Architectural and Urban Composition focuses on the idea that the present and legitimate issues related to restoration, functional adjustment and energy saving should be included in a general reasoning on the sustainability of architectural and urban form, recalling the opening words of *L'architettura della Città*[3] by Aldo Rossi: «[…] in describing the city, we are mainly interested in its form […]». So sustainability of form is not only instrumental and technical, within research of urban themes[4] (exemplary of 'ideas of cities') that should comply with the urban or peri-urban context, with appropriate procedures of composition, with architectural forms and features related to the meaning of the contemporary dwelling and to civil sense of Architecture.

Thus, our contribution aims at understanding - in some carefully selected case-studies - the admissible operations on the individual residential building for its adaptation to the demands of contemporary life or also for the restoration of its original design when compromised. But even more our contribution aims at understanding how to design interventions of replacement and/or addition, on the scale of 'urban composition'. [5]
Following this idea the program of the Laboratory of Architectural and Urban Composition 2 was built selecting as 'project area'[6] *Rione Luzzatti* in Naples. *Rione Luzzatti* is a residential district built by IACP (Institute for Council Houses) in 1914-29; in this district a block was re-built by Luigi Cosenza in 1946-47 after the air raids of the Last World War. On an urban scale, the first expansion of the XX century in the eastern part of Naples - near to the XIX century addition of Vasto and Arenaccia districts and bounded to the north by via Nuova Poggioreale at the foot of the Poggioreale hill, to the south by corso San Giovanni along the coastline and to the east by via Traccia that connects the two aforesaid axes - was identified as the 'study area' where to investigate the relations between the Rione and the design of the city as a whole.

Rione Luzzatti was built by the Institute for Council Houses like a chessboard of six squared blocks of 80 meter, each with courtyard on a grid of 10 meter wide streets. The square grid rationalizes and amplifies the Vasto grid. If in Vasto we can see high density buildings with very small courtyards - like in *Mietkasernen* typology - on the opposite, in *Rione Luzzatti* the courtyard block is realized through the juxtaposition of independent buildings from engineering manuals that, in those years, was spreading in Italy as the technical answer to the growing demand of social housing. Each squared block is defined by six perimeter buildings (two on each east and west sides and one on the north and south) separated by lower buildings intended for community services and commercial activities.

Further residential buildings are designed - but not all built - within the courtyards. In 1926 a new block on the east side was constructed with the same typologies and the same urban structure and a new school in a late-eclectic design, in relationship with the existing church, was built in the central block of the northern strip. In 1946-47, after the destruction caused by the bombings of Last World War, Luigi Cosenza, the competition winner, re-built one of the *Rione* blocks and he decided to confirm the urban structure while designing 'modern' buildings of two different types. To the north and to the south, Cosenza designed 'balcony type' buildings with balcony running along them and the services to the north and living rooms and bedrooms to the south. To the east and the west, he designed 'modular-linear type' buildings: each one has single stairs that service two flats. On both sides of the block the stairs are reversed but they maintain the entrance from the courtyard: a little difference in the internal design guarantees the living rooms and kitchen face to the west and the bedrooms to the east.

So *Rione Luzzatti* - built on the edge of the eastern suburbs of Naples but today squeezed between Central Station area and the Business District - shows a straight urban structure based on the repetition of a squared block and a central block intended for school facilities to serve the neighborhood. The project by Luigi Cosenza is an important lesson that combines modern standards for social housing (well designed orientation and mix of different typologies) and rules of urban design (the confirmation of the morphological choice of the courtyard). As Sergio Stenti[7] wrote, Luigi Cosenza built, in this case, the first and only example of a courtyard block of the Neapolitan rationalist age: the age that Mario Labò called, in «Metron» magazine, the age of *white architecture* characterized by the "pride of modesty". [8]

As a whole, this Rione is still, despite the tampering and the loss of the original decorations, a 'part of city' with a precise identity and recognizable morphological boundaries[9]. Moreover, it is a possible 'right measure' offered as a reflection on the periphery that lost its identity.

Talking about identity is a way to reflect on the today's impossibility of generalizing urban 'artifacts'; consequentially a way to illustrate the inadequacy of the instruments as traditional city plans unable to control the urban transformation and moreover constantly varied for specific interests and through ad hoc procedures. In this context a great cultural understanding of the technical instruments is really important to redefine the balance between 'culture of the city plan' and 'culture of the project'.

In this new balance the project is not only an instrument of transformation but, above all, an instrument for the knowledge able to forecast, in the observation/description, the possible transformations of places within a defined and clear urban strategy. In this sense, *Rione Luzzatti* is a possible 'right measure' because it represents a defined and complete morphological unit and, moreover, because it is a measure on which it is possible to imagine a project of regeneration able to direct and guide its own development. The Rione, because of its morphological inertia and because of its formal completeness, is one of the urban units of the Neapolitan periphery from which it is possible to imagine an overall polycentric reorganization of the eastern conurbation of the city of Naples: industrial area in the past, then residential, then tertiary and today in search of its own identity.
Between the neighborhood and the expansion of the Business District to the north, a long-narrow area, free from buildings and town-planning rules, is the place that suggests a project of expansion. Moreover, this project allows for the demolition of the buildings built inside the courtyards as addition and densification of the original project.

Some planimetric hypotheses were developed, working together with teachers of the Laboratory of Construction, looking at three criteria: the urban analysis, the typological issues and the energy sustainability considered in terms of orientation and shape of the buildings more than in terms of application of new technologies. The result is more than one project hypothesis founded on the ancient wisdom of the *Architecture of the City* to join urban issues related to the general structure of the city in the area, morpho-typological issues related to the ways of living and issues related to energy saving.[10]

The different solutions state different and complementary methodological options: *continuity* of the urban plan rule, *admissible variation* of the rule and construction of a morphological *boundary* as a measure of the entire district. The words *continuity, admissible variation* and *boundary* exemplify different attitudes and strategies of urban renewal that aim to represent, on a general level, complementary methodologies and possible answers to the incipient urban dispersion and fragmentation of our contemporary peripheries. The non-urban sprawl today is shown as a confused deposit of individualism, congestion, indiscriminate consumption of land, "envy of the centre" and search of formlessness.[11] Besides 'urban sprawl' is an expression that tends to be an ineffectual description, to be an observation of the *status quo*[12] and that «in no way can helps to identify tools, ways, control methods or even development.»[13]. The widespread post metropolis[14] that grips the historical city, in fact, produces clusters and fragments without design and form characterized by degenerative events difficult to solve: atomization of the residences and associated privatization of the public spaces; disposal of industrial areas; excessive diffusion of the tertiary; accumulation of infrastructural systems[15] on conflict; absence of representative public spaces and of new focus-areas able to redefine the role and the status of the natural parts, often only residual.

In the case of *Rione Luzzatti* the three above mentioned strategies were used and tested in the project to evaluate their effectiveness, their real ability to summarizing, in morphological terms, their nature of complementary strategies in relation to a specific place and to a system of recognizable relationships.

The hypothesis of *continuity* with the urban rule is explicit in the implementation of a series of open courtyards to the blocks of the district as completion and closure of the *Rione* from which measures and uniform architectural features derive. In this case *continuity* isn't in the architectural style of the district but essentially in the confirmation and in the assumption of the morphological rule that characterizes the overall form of the urban structure. With an innovation: the opening of the blocks in relation to the public spaces on the two sides of the church and near to the school.

The second hypothesis - *admissible variation* - juxtaposes the reasoning on the completion of the blocks and the idea of the 'strip'. The project suggests an alternation of different building types: the *modular-linear* and the *urban villa*. The buildings establish metrics and positional relationships with the blocks but, at the same time, they define an east-west strip parallel to via Carlo Bussola, also defined by the design of the open spaces inside the linear block. The variation is admissible because, assuming the same types and sizes of the buildings in the *Rione* and introducing also the *villas* and the terraced houses, it designs an entire block with alignments, openings and breaks that attend to dialogue with the structure of the *Rione* and with the expansion of the Business District offering a way to mediate between the two settlement models.

Finally the third hypothesis - suggested also by the change of scale and urban form denounced in the buildings on both sides of the strip - works on the construction of a big linear building as the *boundary* between the two different urban units.
The boundary at the same time measures the morphologically defined structure of the *Rione* realizing a new front and sympathizes with the expansion and amplification of the new buildings of the Business District, mitigating their extreme disposition to the verticality.

These 'themes', at the urban scale, were proposed to the students through plan designs: the students had to interpret them not looking at the original architectural solutions, but looking at those which are the more consistent with the given theme. This is a useful and 'measured' exercise compared to an educational work. The urban theme, in the three different options, reproduces a common condition in urban dynamics where often a master plan that identifies the general terms and a morphological choice related to the legislation is open to various interpretations and definitions.

About the typological choice of types, students had to identify the most appropriate choices in relation to the criteria of solar orientation (maximizing south facing and the location of services to the north) and of best sitting of the buildings with respect to the constraints imposed by the urban structure. In this case too, it was important to conjugate formal organization of the building and the needs for arrange housing sizes, on one side, and, on the other, energy saving, reduction of negative environmental externalities and living comfort. The reflection on the constraints imposed by the theme and by the typological choice communicates with the site: here a possible motivation for a general consideration on the periphery[16] and its redevelopment and for a special reflection on the measures and the features of the existing quarter.

But the theme, in this educational work, is not only declined to the urban scale but also to the architectural scale, in the several projects, introducing a reflection on architectural features of buildings (construction in volumes or for elements, repetitions, finiteness, uniformity, exceptions), also in relation with the elements of the construction. What we want to say and emphasize, in an educational experience which is founded on the conviction of the transmissibility of our job, is the application of a *method*[17] which is founded on the rationality of choices and on certain rules.

[1]The Laboratory of Architectural and Urban Composition 2 held by Federica Visconti and Renato Capozzi in the Faculty of Architecture of Naples shared with the Laboratory of Construction held by Mario Losasso the guide lines for the choice of the design theme and the methodological ones. The teachers worked together to develop and define the urban role of the project in the urban scale, the appropriate orientation of the buildings with the aim of an optimization of the engineering of the student's projects according to the principles of the active and passive energy sustainability.

Notes

[2] The interdisciplinary program is coordinated by prof. Paola Ascione and involves various skills of researchers in Technology of Architecture, Urban Planning, Law, Urban and Architectural Composition.
[3] Rossi A., L'architettura della città, Marsilio, Padova, 1966.
[4] Monestiroli A., Temi urbani, Unicopli, Milano, 1997.
[5] For a definition of Urban Composition see Fatigato O., Viscione S. (edited by), La composizione urbana, collana "Materiali di Ricerca" directed by Spirito F., n. 6, Cuen, Napoli 2008.
[6] Spirito F., La definizione dell'area-progetto, in «ARC», Architettura Ricerca Composizione, n.8, Milano, 2001.
[7] Stenti S., Napoli Moderna. Città e case popolari 1868-1980, Clean, Napoli, 1993.
[8] Cfr. Melograni C., Architettura italiana sotto il fascismo. L'orgoglio della modestia contro la retorica monumentale 1926-1945, Bollati Boringhieri, Torino, 2008.
[9] For a definition of urban 'part', formal defined, see Aymonino C., Il significato delle città, Laterza, Bari, 1976.
[10] On the theme see Losasso M., (edited by), Progetto e innovazione. Nuovi scenari per la costruzione e la sostenibilità del progetto architettonico, Clean, Napoli, 2005, et, Ascione P., Tecnologie e materiali nei quartieri napoletani, in U. Carughi (edited by), Città, architettura, edilizia pubblica. Napoli e il Piano Ina-casa, Clean, Napoli, 2006.
[11] For a definition of formlessness, Valèry P. (1938), Du sol et de l'informe, in ID, Degas Dase Dessin, then in ID, Œuvres, II, éd. Hytier, Gallimard, Paris, 1960.
[12] Gregotti V., Contro la fine dell'architettura, Einaudi, Torino, 2008.
[13] Stellario d'Angiolini L., Un'altra prassi urbanistica, edited by Acuto A., Libreria Clup, Milano, 2004.
[14] Gregotti V., Architettura e postmetropoli, Einaudi, Torino, 2011.
[15] About relation between urban design and infrastructures, Pezza V., Città_e_metropolitana, Clean, Napoli, 2005.
[16] For a definition of periphery, Rossi A. (1960), Il problema della periferia nella città moderna, in «Casabella-Continuità», n. 241, 1960.
[17] About a method articulated in: theme, type, site, construction and architectural features see Monestiroli A., Questioni di Metodo, in ID, La metopa e il Triglifo, Laterza, Roma-Bari, 2002.

Legenda

Image 1
The "boundary". Projects by the students of Laboratory of Architectural and Urban Composition 2 directed by Federica Visconti with Renato Capozzi, academic year 2011-2012.
Image 2
The "continuity" and the "admissible variation". Projects by the students of Laboratory of Architectural and Urban Composition 2 directed by Federica Visconti with Renato Capozzi, academic year 2011-2012.
Image 3
The "boundary". Models by the students of Laboratory of Architectural and Urban Composition 2 directed by Federica Visconti with Renato Capozzi, academic year 2011-2012.
Image 4
The "continuity" and the "admissible variation". Models by the students of Laboratory of Architectural and Urban Composition 2 directed by Federica Visconti with Renato Capozzi, academic year 2011-2012.
Image 5
Projects by the students: A. Ambruoso and A. Colucci; M. Canonico and L. Cappelli; D. Palma and F. Vardaro; F. Cimmino and R. Gagliardo; F. Adiglietti and T. Ciccone.
Image 6
Projects by the students: K. Barra and G. Costantini; M. Decataldo and M. de Somma; C. Esposito and R. Mirella.
Image 7
Projects by the students: A. Termino and F. Perrone; S. Sgueglia, M. Simioli and S. Romeo.
Image 8
Projects by the students S. Vitiello and G. Santonicola.

Bibliography

Ascione P., *Tecnologie e materiali nei quartieri napoletani*, in Carughi U. (edited by), *Città, architettura, edilizia pubblica. Napoli e il Piano Ina-casa*, Clean, Napoli, 2006.

Augé M., *Non-luoghi. Introduzione a una antropologia della surmodernità*, Elèuthera, Milano, 1996.

Aymonino C., *Origini e sviluppo della città moderna*, Marsilio, Padova, 1965.

Aymonino C. , *Il significato delle città*, Laterza, Bari 1975.

Bernoulli H., *La città e il suolo urbano*, Vallardi, Milano, 1951.

Bucci F. (edited by), *Periferie e nuove urbanità*, Electa, Milano, 2003.

Cacciari M., *La città*, Pazzini Editore, Villa Verucchio, Rimini, 2004.

Calvino I. (1975), *Gli dei della città*, in ID, *Una pietra sopra*, Einaudi, Torino 1980.

Ferraris M. (1983), *Polis e Metropoli*, in ID, Tracce. *Nichilismo moderno postmoderno*, Mimesis, Milano, 2006.

Grassi G., *La costruzione logica dell'architettura*, Marsilio, Padova, 1967.

Gregotti V., *Contro la fine dell'architettura*, Einaudi, Torino, 2008.

Gregotti V., *Architettura e postmetropoli*, Einaudi, Torino, 2011.

Hegemann W., *La Berlino di Pietra: storia della più grande città di caserme d'affitto*, Gabriele Mazzotta Editore, Milano, 1975.

Hilberseimer L., *La natura delle città*, edited by De Rosa L., il Saggiatore, Milano, 1969.

Hilberseimer L., Un'idea di piano, Marsilio, Padova, 1967.

Koolhaas R., Bigness or the Problem of Large, in ID, S-M-L-XL, Monacelli Press, New York 1994; trad. it., in «Domus», n. 764, 1994.

Koolhaas R., *Junkspace*, Quodlibet, Macerata, 2006.

Losasso M. (edited by), *Progetto e innovazione. Nuovi scenari per la costruzione e la sostenibilità del progetto architettonico*, Clean, Napoli, 2005.

Monestiroli A., *L'arte di costruire la città*, in ID, *La metopa e il triglifo. Nove lezioni di architettura*, Roma-Bari, Laterza, 2002.

Monestiroli A., *Verso la città policentrica*, in AA. VV., *Il centro altrove. Periferie e nuove centralità nelle aree metropolitane*, edited by Neri R., XX Triennale di Milano, Electa, Milano, 1995.

Monestiroli A., *Temi urbani*, Unicopli, Milano,1997.

Pagano L., *Periferie di Napoli : la geografia, il quartiere, l'edilizia pubblica* , Electa, Napoli 2001.

Pezza V., *Città e metropolitana*, Clean, Napoli, 2005.

Rossi A., *Il problema della periferia nella città moderna*, in «Casabella-Continuità», n. 241, 1960.

Rossi A., *La città e la periferia*, in «Casabella-Continuità», n. 253, 1961.

Rossi A., *L'architettura della città*, Marsilio, Padova, 1966.

Rossi A., *Scritti scelti sull'architettura e la città*, edited by Bonicalzi R., Clup, Milano, 1975.

Spirito F., *I termini del progetto urbano*, Officina Edizioni, Roma, 2003.

Stellario d'Angiolini L., *Un'altra prassi urbanistica*, edited by Acuto F., Libreria Clup, Milano, 2004.

Stenti S., *Napoli Moderna. Città e case popolari 1868-1980*, Clean, Napoli, 1993.

Ariadni Vozani
National Technical University of Athens, Greece

Athens in crisis: Education on the issue of emergencies. Beyond didacticism

The character of the city center today: a conflict between "desire" and "reality".

The continuous deterioration and desolation of the center of Athens represents a reality we can't ignore. The importance of this detrimental effect seems to increase when one takes into account the highly symbolic role that the city center has assumed in recent times, since in the big cities (of later modernity) it also became the projection of society's imaginary image of itself.[1]

The interpretation of the term "desolation" is identified with what we would call the "lack of life" in the city. Athens lies in an anesthetic state; no blood is flowing through its veins. We refer to the actual and dramatic decrease in both the size and quality of the diverse flows of activity and multiple functions that traditionally occurs in city centers. The explanation lies in a series of phenomena that we intend to examine shortly.

This new and evolving reality causes inconsistencies in the way people experience the city, in a spatial and temporal sense. Nevertheless, while the everyday pulse of the city appears to faint, "emergencies" gradually come to represent "normality", due to their frequency and repetition. The center resembles an empty arena lying in wait for the "next event": the next big demonstration, the next confrontation with the world's tv screens as its witness. In that sense, one often hears that the city is now "more alive than ever", considering the fact that during these demonstrations, citizens gather and mobilize dynamically in a scale unprecedented in recent history. The destruction that follows almost every mass gathering, reveals in the most emphatic way an aspect of the Greek society that permeates all social classes. This social aspect is strongly connected to the particular way in which both the concept of public feeling and the idea of public property in the urban space have been historically shaped. In common conscience, public space seems not to be associated with the citizens. Instead, it is identified with the institutions of a state that attracts anger and discredit. The city becomes an easy victim for the venting of that anger: It is burned literally and metaphorically. No one stands to its defense. It almost appears as if the public unconscious was murmuring Kavafi's lines: *"A new city will be found. Better that this one...", perhaps avoiding to remember the poem's last verse: "Just like you ruined your life here, in this small city...you ruined it in the whole world*'.[2] Before we attempt to point out the way in which architectural education affects and is affected by this reality, we need to briefly outline the parameters which shaped this situation.

Until recently: The indifferent center as opposed to the dynamics of the heterogeneous suburbia in Athens

Ten years have past since Greece's participation in the 2002 Venice Biennale with the title "Absolute realism".[3] If that presentation interpreted the intricacies of Athens- a city whose dwellers were accustomed to calling it 'ugly'- through a post-modern poetic, we now face a drastically different situation.

Considering the clash between the center and the periphery of the city -either in the form of planned suburbs, or in the form of an incoherent and usually illegal urban sprawl-, it was the periphery that came about as the livelier and most interesting part of the city. The center of Athens, that was erratically planned and evolved according to the prevailing European ideals at the time of the foundation of the Greek State, presented up until the 2000's a relatively manageable regularity, which rendered it indifferent, as far as the dynamics of its evolution are concerned. The fact that the center was historically inhabited by a middle class, with different characteristics compared to the powerful and prospering bourgeoisie of the Greek diaspora[4], is strongly related to the way that the city, and especially its public space, was experienced. The center of the Greek capital hosted the middle class society and the culture, administration and finance that supported it, but it "changed hands" quite easier than what was the case in other European capitals. It was gradually abandoned by the classes that it was originally indented for, until it gradually reached its current state: that of complete neglect by them.

From the "indifference" to the "event of a foretold death'

A series of strategic decisions by the state, in combination with the lack of any policy aimed at countering phenomena of degradation, engendered the city's center downfall long before the current financial crisis. Granted that we now face the "death" of the city center and of the version of 'centrality' as it was historically shaped, we argue that this death was in a way foretold.

While one attempts to concisely discern the main factors that led to the disintegration of life in the city center, three main issues stand out.

A. The gradual abandonment of residential areas by the middle class (regardless of its background) in favor of the suburbs and the settlement of economic immigrants in the center of Athens would not necessarily form part of the degradation phenomenon, had it not been for the increasing delinquency it seems to be accompanied with.

B. The removal of a great part of administration and education centers[5], following a logic of decentralization, resulted in a series of abandoned buildings and deprived the center of a life-giving population with an active role at the local economy.

C. The phenomenon of "discontinuity" of the city. Scoffier underlines that: *The urban tissue of Athens bears witness to permanent confrontations.(…) Athens rejects mobility, dereliction, and wandering preferring the poetry of a collage of unrelated worlds*.[6] What Scoffier detects is a series of discontinuities in the city. These discontinuities, owing to both the planning process and the special topography of the city, result in the cancellation of networks of pedestrian movement and the creation of 'isolated' urban islands. There are different categories of these discontinuities, the important being the one that concerns the cut- off of the archaeological sites from the contemporary city.

The economic crisis of the last few years has accelerated the collapse of the center, since the consumers' ever deteriorating purchasing power resulted in the closure of more that 40-50% of businesses. Any advantages that the commercial areas in the center might have held over the suburbs' shopping malls are thus disappearing. Public space is overflowing with homeless people, delinquency rates keep increasing and the image of the city with its run down historic buildings and empty shops has become an unwelcoming scenery.The end of the center in its traditional version does not rule out the potential establishment of a new centrality, as long as we find the terms that will redefine it. By understanding the mechanisms that in conjunction with a policy of development could reactivate the center and take it into a new era by redefining "centrality" in today's terms, can we formulate redevelopment strategies with architectural / urban planning at its basis? D. Harvey wrote a decade ago: *When history repeats itself, (…) , it occurs first as tragedy and the second time as farce. How can we, to extend Marx's metaphor somewhat, prevent the modernist tragic- comedy of mid century urbanization being turned into a late twentieth century post- modernist farce?*[7]. In the case of Athens and in the scope of a broader policy, which are the spatial conditions that would allow the compilation of the "contemporary" city centre?

The "alarm" of architectural education. : confronting "reality" ….or the contribution of "reality" in shifting the hierarchy of subject material in architectural education.

The realization of the consequences following the collapse of the city centre, has led to the formulation of a series of concerns by people involved in related scientific circles, the press and the media. At the same time, the reaction to this phenomenon is becoming an increasingly common focus of research and projects in schools of architecture, both in Greece and abroad.[8] This is typical of the shifting of interest that is already taking place, from research topics that have so far understandably focused on global issues (like the environment) to those that prioritize the resolution of the "local", under the pressure of the "alarm".

It is through this ever increasing interest in Athens, that a corpus of material is being produced in schools of architecture. This is divided in two main categories:

The first one corresponds to an important corpus of theoretical analyses. Depending on their ideological background, these approaches seem to diverge, not as much in the interpretation or the hierarchy of the crisis's "ingredients", but in the direction of their problem-solving proposals. A major issue of these analyses concerns the redefinition of the concept of centrality, since its definition through the traditional categorization (in commercial, administrative, historical etc centres) has proven to be elusive. These categories as well as their logical boundaries are under constant negotiation. Alterations in urban conditions, in addition to the well established inability of its citizens to inhabit public space and familiarize with it, offers opportunities for the formulation of new theoretical approaches that enrich our current knowledge. These approaches -which are a prerequisite for any of the proposals created through the educational process - set the background for a series of research directions that formulate the intervention strategies. At the same time they provide the state with multiple "tools", allowing them to decode, evaluate, systemize and use the data according to its own priorities, independently from the aims of the educational process[9]. Thus, architectural education seems to reclaim today -perhaps not for the first time- one additional field of discourse with "reality", through the ability to directly confront and affect it.

The second category of material concerns the architectural design proposals. If we accept that a critical comprehension and evaluation of the parameters that define a city is a precondition of any kind of intervention, Athens case study is posing further difficulties. Professors and students have to face a city in "free fall", whose characteristics change in a pace that we are not familiar with. The complexity of the subject matter and the psychological tension associated with the actual contact with the conditions one encounters in some areas of the centre has a "paralytic" effect. This "paralysis" is often accompanied with a feeling of ''futility" towards the ability of architecture to actually deliver a new reality to the city. In the meanwhile, today's conditions seem to activate -more than ever before-, the desire to confirm that architecture could make a difference by contributing to the necessary change. The advantage of the educational process as opposed to a professional approach lies exactly in its capacity to transcend the feeling of futility through that of desire. Both the educational demand for the development of a concise proposal -here and now- and the excuse offered by the investigational and experimental nature of the projects, a priori indicate a rupture to "reality's" resistance.

The result is a series of academic proposals that proves extremely valuable, not only as far as the possibility of their realization is concerned – a possibility which is not necessarily slim-, but mainly because they can act as a catalyst for a series of radical processes, through the stimulation of the imaginary. The emergence of a new version of the city, not only in form but first and foremost in the ways it is experienced, "erodes" reality and collectively sets us in search of the actual mechanisms that would "place" that vision in reality. These proposals indicate two main directions.

The first direction concerns those projects that seem to belong to the field of the "utopic". These are defined by a basic choice; that is the rupture with the established rule set that immobilize our creativity (rules set by the current building regulation, legislation and administrative bureaucracy), The proposals of this type often attempt to answer the question of degradation by choosing both the area of intervention and the program of uses that will fuel urban rejuvenation by reactivating the urban fabric. Therefore, in direct relation with the results of the preliminary research, the proposed program almost always includes the reestablishment of residential use in conjunction with diverse land uses and the reorganization of public space.Depending on the array of supported land uses (education, commerce, administration etc) and the examination of contemporary urban living conditions, answers are provided according to the topographical and other data of the existing urban fabric. These projects are defined by the intention to insert new landmarks in order to challenge the discontinuity of the city, and their advocacy of strategic demolition of blocks of flats in order to better support large, city-block scale interventions. The prospect of demolition, which has long been considered a "taboo" for various typical but also ideological reasons, is now strongly supported due to the deteriorization of the condition of existing building shells, without any architectural value. Subsequently, the basic argument in its favor is the need to to 'free' space in order to interconnect the proposed interventions in a dense and oversaturated urban environment. These projects are generally identified in their entirety by the application of a contemporary architectural vocabulary, a certain boldness of scale and a confrontational attitude towards the city. Assuming that the city of Athens constitutes a collage of historical fragments, the projects of this particular group attempt to disintegrate and then dynamically recombine the palimpsest of the city.

It is worth noting that a special subcategory of this group is the one that deals with the connection between the city and its historical substratum, which is non other than its archaeological sites. In the "thick ground" of Athens, through fissures and openings, a series of historical layers appear in a fragmentary way. Continuous boundaries create urban discontinuities, visual as much as circulation ones, and separate areas of the city that could normally support each other's function. Thus, various proposals attempt to counteract to the centre's deterioration through a parameter that does not directly concern the current economic circumstances. Instead, the focus lies with an all encompassing design policy that works through time, the main idea being that by ensuring flowing circulation and movement by both the inhabitants and visitors, one can partly answer the question of urban rejuvenation.

B) The second group of proposals includes these that employ sensitivity and realism and in order to suggest mild strategies of intervention that create small scale capacitors, or what we would call "catalysts", of public space. The attribute of realism stands for their close attention to the scale and adaptability of the interventions, while at the same time taking the economic circumstances into consideration. Nevertheless, what stands out as especially interesting in these proposals is their intention to create a groundwork of "dialogue" with various social initiative groups that aim to intervene to and reformulate public space. Without fail, the existence of these groups reveals a direct criticism towards the state's inability to address the issue of either deficiency or ongoing desolation of public space. While the lack of architectural design is apparent in the local realized interventions in the city, the liveliness of these spaces testifies to their success as realistic urban experiments. One critical point as far as these student projects are concerned, is the ambivalence towards the architectural vocabulary and tool sets employed. Despite the fact that this attitude expresses a welcome critique toward the established design norms, the projects of this category usually succumb to certain awkward design result in their attempts to break the norm.
The two aforementioned groups appear to be different, however they do showcase a strong point of convergence in their choice to create networks of urban interventions. Thus, they propose extensive networks of interventions that differ in their hierarchical approach towards the multiple different 'centres'. They call into question the traditional recipes of urban design by searching for new landmarks through which the city is essentially re-mapped. These approaches seem to create a new "mythology". A 'mythology' that aims to reconstitute an urban poetic, and as such, it needs all the freedom it can get in order to properly evolve. This "mythology" -like any mythology- is able to function both as an interpretation and as a constituted principle towards reality. Architectural education today -and maybe more than ever in the case of Greece- must nurture it, by providing it with a proper framework through which it could further develop.

Ariadni Vozani
National Technical University of Athens, Greece

Notes

[1] Kampilis T., The battle about the centre ant the tree, in the Greek Sunday newspaper To Vima tis Kiriakis, 12/ 12/2009.

[2] Translation of Kavafis 's poem Polis (The City).Transl. by Vozani Ar.

[3] See Catalogue of the Greek participation on the 8TH International Exhibition of Architecture, Venice Biennale 2002, sadas pea & the commissioners: Athens 2002 Absolute Realism.

[4] Athens' architecture scarcely reaches the splendour of the urban architecture that still adorns the avenues of the great European cities, where Greek communities flourished during the end of the 19th and the beginning of the 20th century (such as the Grand Rue de Peran in Istanbul or the Street of the Greeks in Odessa).As Philipides notes; Despite its growth,…, Athens remained an urban center in the Balkans, always of lesser importance if compared to Istanbul, Smyrna or Alexandria. (Lessons of Athens (2011) p.224)

[5] Only in the last decade 8 ministries 'moved out' from the centre of the city to the suburbs of Athens, together with 4.000-5.000 employers

[6] Scoffier R. ,The lessons of Athens, in Athens 2002 Absolute Realism, Athens,2002,, p. 47-48

[7] Harvey D. Possible Urban Worlds, Fourth Megacities Lecture. The Hague, (2000) in http://en.wikipedia.org/wiki/David_Harvey_(geographer) [accessed 27 -2-2012] p. 28

[8] See for example :a) NTUA , Faculty of Architecture, Design course: Athens in Crisis (2010-11). Tutors: Kourkoulas A., Vozani A., b) EPFL, lapa , Project: Athens Lessons (2010-11). Studio Director: Gugger H, c) University of Thessaly, Faculty of Architecture. Design course: Accursed stock (2010-11) Tutors: Z. Kotionis, Ar. Antonas, K. Panigiris, F. Oreopoulos, d) Berlage Institute, Design course: Labor, City , Architecture (2010-11) Tutors: Aureli V., Zenghelis El.

[9] Statutory intensives, under the pressure of strong public demand, had led recently to a significant number of research programs concerning Athens, by different academic institutions in Greece.

Bibliography

Fillipides D., New Greek Architecture (in Greek), Melissa, Athens, 1984

Gugger H., Kerschbaumer G., Menzel G., (ed.) Athens Lessons, Lausanne, 2011

Kotionis Z., Multiple, Commons and Architecture, University of Thessalia Press, Volos, 2012

Koumpis T., Moutsopoulos T., Scoffire R., (ed.), Athens 2002 Absolute Realism, Futura, Athens, 2002

Naik D.& Oldfield TR. (ed), Critical Cities, Ideas, Knowledge and Agitation from Emerging Urbanists, vol.2, Myrdle Court Press, London, 2009

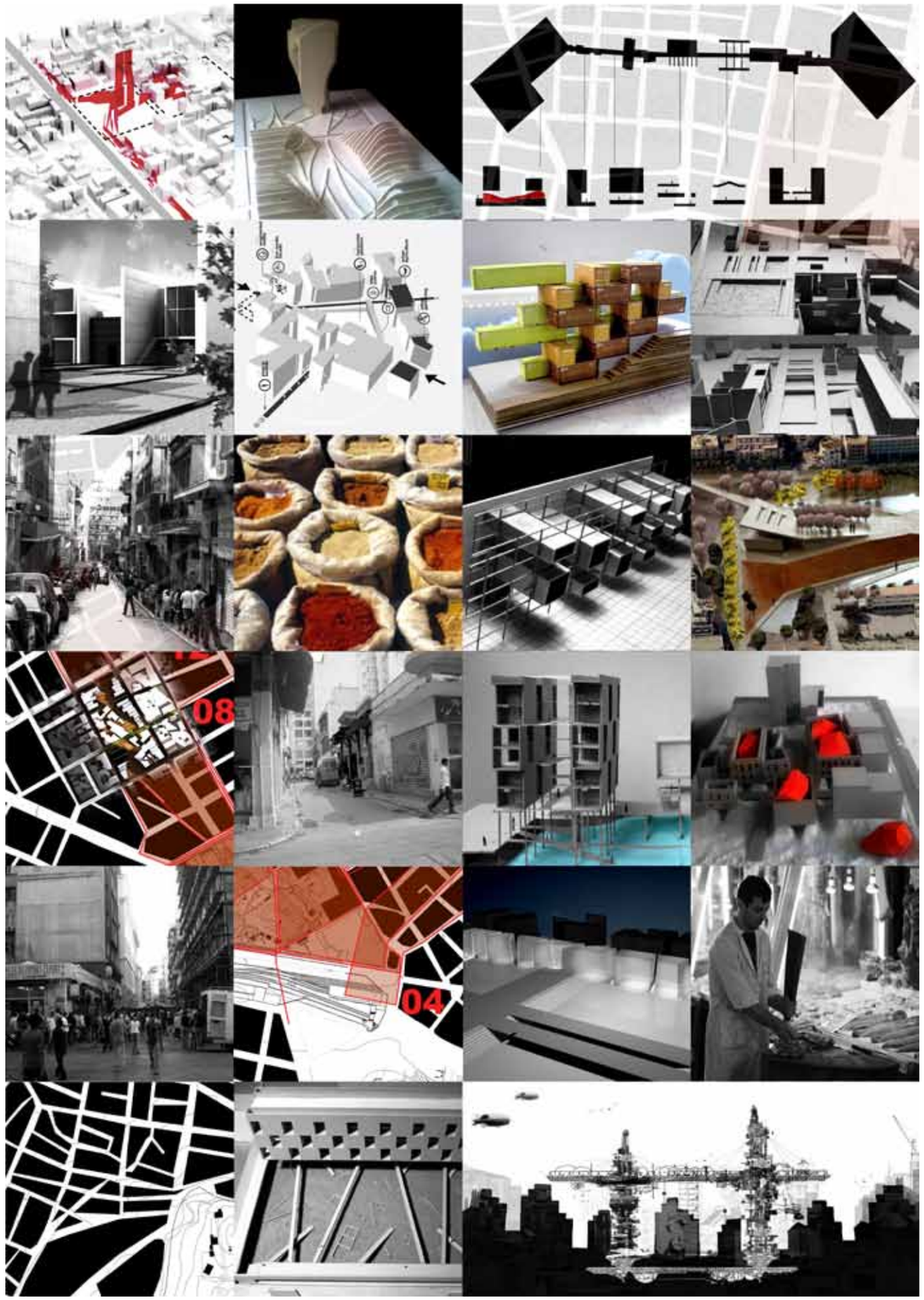
Sennet R., The Fall of Public Man , Knopf, New York, 1977

Tournikiotis P., Architecture in modern era (in Greek), Futura, Athens, 2006

Legenda

image 1 : Elements of students' projects from the design course Athens in Crisis at the Faculty of Architecture, NTUA. (2010-2011) Tutors: Kourkoulas Andreas, Vozani Ariadni.
Teaching assistant: Androutsopoulou Eirini

image 2: Centre of Athens, 2011
Photo by Bisti Marianna



ISBN 978-2-930301-56-3